# merican Perfu

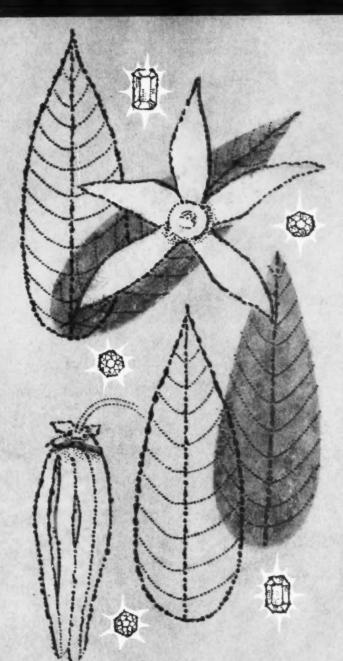
COSMETICS TOILETRIES SOAPS

JANUARY 1958

MAGAZINE OF TASTE AND SCENT



Use of Patch Test ... Page 33 Toxicity of Safrole . . . Page 57



Fragrances skillfully created by Ungerer are superlative too!

For over 60 years they have been winning widespread recognition and high praise for character and originality.

Let Ungerer help make yours the "product of products."



Ungerer, Vidal-Charvet Paris, France Magerer-&-Co

HOME OFFICE: 161 Avenue of the Americas, New York 13, N. Y.

plant and laboratories Totowa, N. J.

CHICAGO . BOSTON . PHILADELPHIA . ST. LOUIS . LOS ANGELES . ATLANTA



## Handle, store, unload aerosol propellants?

here are 3 helpful new technical manuals you will want on

## genetron® AEROSOL PROPELLANTS

These three new Genetron technical manuals contain valuable data for everyone in the aerosol industry who is concerned with the handling, storing or unloading of propellants. Each manual is clear, easy to follow, profusely illustrated with photographs and diagrams . . . designed to help you achieve optimum efficiency and economy in handling Genetron propellants. Mail coupon today for your free copies.

"Genetron" Department

## GENERAL CHEMICAL DIVISION

Allied Chemical & Dye Corporation 40 Rector Street, New York 6, N. Y.



## GENERAL CHEMICAL DIVISION

Allied Chemical & Dye Corporation 40 Rector Street, New York 6, N. Y.

Please send me a free copy of each of the technical manuals checked:

- ☐ Handling, Storing & Unloading GENETRON Aerosol Propellants in TON CONTAINERS
- ☐ Handling & Unloading GENETRON Aerosol Propellants FROM TANK CARS AND TANK TRUCKS
- ☐ Handling, Storing & Unloading GENETRON Aerosol Propellants IN SMALL CYLINDERS AND DRUMS

Position

Company

Address

Zone\_\_\_State



## FELTON'S NEW LINE OF COMMAND... MASCULINE SCENTS

For men only—Felton's vigorous new perfume group is yours to command. Again, Felton's unique combination of experience, skill and instinct has achieved the unmistakable eau de success. Here are all the lures you require for tracking down today's tremendous masculine market.

For big game... Beau Brummel #1256, a he-man odor with distinctive woody, dry bottom note. Esquire S.T. #20 and Esquire Country #20 appeal to aristocratic tastes, an original aroma with beautiful dry notes.

For the outdoor species... Fleurs de Tabac #6-1204, a tobacco and leather character, which stands out, even in the lowest concentrations. All are compounded for complete flexibility... for sales-appealing toilet waters, after-shave colognes, talcs and aerosol products.

**Perlume compounders** will find Felton's new bases stimulating tools for building new compounds or for improving existing lotion, talc or aerosol scents:

Adamal, rich in fine woody notes, dry-

ness tinged with precious resinous notes. Brummel Base #1156 can be used from 5-15% in existing compounds for a woody-dry bottom note of strong masculine appeal. Aldicuir, a unique "natural" base with rich, true leather note. Write for free testing samples, today.

FELTON CHEMICAL CO., INC. 599 Johnson Ave., Brooklyn 37, N.Y.

Sales offices and plants in major cities, Canada and overseas.

### RESEARCH

The Patch Test ..... Harry L. Rubenkoenig & Robert A. Quisno 33 Use in estimating hazards to the skin

### **PRODUCTION**

Preparation of Aromatic Aldehydes ...... Kurt Kulka, Ph. D. 51 Benzaldehydes from miscellaneous compounds

## FLAVOR SECTION

Toxicity of Safrole . . . . . . . . . . . . Morris B. Jacobs, Ph. D. 57 Investigation of physiological effects

## contents:

## MANAGEMENT

S. C. C. Honors Dr. John H. Draise ..... Award for services-Abstracts of technical papers Toilet Goods Association Scientific Section Meeting ...... Abstracts of some of the papers presented

## **DEPARTMENTS**

Aerosol News Questions and Answers ..... Packaging and Promotion ..... Aeroscripts ...... Jack Pickthall 20 New Products and Ideas ..... Market Reports ..... Index to Advertisers .....



COVER: The brittle symmetry of winter foliage. Photo John H. Muller.

VOL. 71, NO. 1

JANUARY, 1958





J. H. MOORE, Jr.

President

JOHN H. MULLER

M. G. DE NAVARRE

Editor

Technical Editor

M. B. JACOBS Flavor Editor

WM. LAMBERT

Vice President and

**Business Manager** 

WALTER M. BONE

Assistant Editor

A. van der SHAW Art Director WINSTON H. REED

MARY HARRIS

Aerosol Editor

IRVING PINES Circulation Director

Advertising Production Mgr.

LOS ANGELES

CHICAGO

McDonald - Thompson, Richard Eubanks, 3727 W. Sixth Street, Los Angles 5, Calif. Dunkirk 7-5391

EDITORIAL AND EXECUTIVE OFFICES 48 W. 38th St., New York 18, N. Y. Lüngsers 5-3320

SAN FRANCISCO McDonald-Thompson, McDonald, 625 Market St Francisco 5, Calif.

PUBLISHED MONTHLY by Moore Publishing Company, Inc. Publication office: Emmett St., Bristol, Conn., U.S.A. Editorial and Executive Offices: 48 W. 38th St., New York 18, N.Y. J. H. Moore, Chairman of the Board; J. H. Moore, Ch.; President; Latan Neff, Vice President; Harold W. Springborn, Vice President; G. B. Brennan, Secretary, Subscription Rates: U.S.A., Possessions and Canada, \$5 one year; 50¢ per copy, Foreign, \$15 one

year. Entered as second class matter, January 12, 1950, at the Post Office at Bristol, Coun., under act of March 3, 1879. Moore Publishing Co., Inc., is publisher also of Advertising Agency Magazine, American Frinter & Littlographer, Gas Age, Gas Appliance Merchandising, Industrial Gas, LP-Gas and Brown's Directory of American Gas Companies. Address all correspondence to editorial and executive offices.

(Cable Address: Robinpub, N. Y. Volume 71, No. 1. Copyright 1958, Moore Publishing Co., Inc.)

NEW ROAD TO

SUCCESS

Please ask for data sheets and samples

WITH INEW AROM

AROMATIC CHEMICALS

## ISO-BERGAMATE "DRAGOCO"

resembles the fragrance of the bergamot oil, along with a soft fruitiness and a delicate, woody background.

## DRAGO-JASIMIA

to accentuate fine flower scents particularly for jasmin proven essential in deluxe perfumery.

## LACTOSCATONE "DRAGOCO"

provides a typical fecal note with a warm animal background and a delicate woody note

DRAGOCO INC.

256 West Brocoway, New York 13, N Y Tel CAnal 6 - 5813/15



For beauty, utility and all-around satisfaction, opal jars are the most desirable containers for cosmetic creams.

Carr-Lowrey brings you opal jars at their best. Decorated with your own attractive design, they are outstanding containers for your finest products.

SALES

Cleansing

CARR-LOWREY
GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. . New York Office: 415 MADISON AVE. . Chicago Office: 1572 MERCHANDISE MART

## SYRMIS



An exquisite fragrance for perfume, cologne, powders and sachets . . . warm, rich, lasting.

Extensive consumer tests place Syrmis in the top brackets for universal appeal on the American market.

We shall gladly send you a sample so that you may test and try Syrmis; we know that you will be gratified with the results.

\$20.00 the lb. or \$1.50 the trial oz.

Syrmis "C" for creams and lotions . . . that this memorable fragrance may enhance your toilet preparations also.

\$14.00 the lb. or \$1.25 the trial oz.

## COMPAGNIE PARENTO

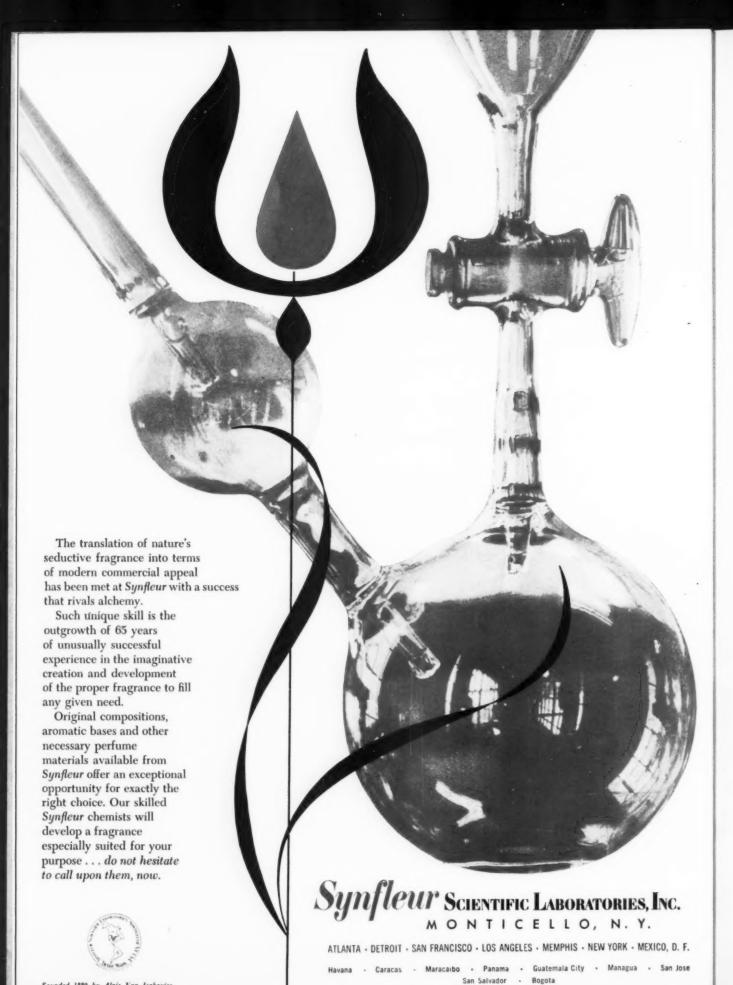
INCORPORATED

CROTON · ON · HUDSON, NEW YORK

NEW YORK DETROIT CHICAGO

COMPAGNIE PARENTO, LTD.

TORONTO MONTREAL



New York Sales Office 40 West 48th Street - PLaza 7-1960

Founded 1889 by Alois Von Isakovics



## MINUTE NEWS . .

Claims for Royal Jelly in Food Products Stopped

Advertising of two companies which employ queen bee royal jelly as the principal ingredient in food supplement capsules have been under investigation by the Medical Frauds unit of the United States Post Office. The companies are the Jenasol Co. which makes a food supplement capsule called Jenasol RJ Formula 60 and the U. S. Bio-Genics Corp. whose product is called RoylJel Formula 101. Numerous complaints led to the investigation by the Post Office; and as a result in its affidavit Bio-Genetics agreed that in future advertising it would not represent or claim that RoylJel Formula 101 could, among others, restore sexual virility in men, restore fertility in men and women or increase the life span and normalize the growth of children. The Jenasol affidavit of agreement stated that it would not attribute to Jenasol RJ Formula 60 that it can cure or eliminate sex impotency or lost manhood, restore fertility to women, grow hair or cure baldness, remedy heart conditions, low blood pressure, nervous disabilities, climatic diseases or insure human longevity. Neither affidavit, under the law, is an admission of violation or guilt. Meanwhile Jenasol has secured an injunction in the New York courts against U. S. Bio-Genics in a suit for \$750,000 damages for allegedly appropriating its direct mail advertising promotion ideas.

J. C. Penney Co. Chain Stores Testing Consumer Credit Plan For the first time in its history the J. C. Penney Co. chain stores are testing out charge account service, thus departing from its traditional policy of cash and carry. According to American Druggist this is being done because consumer credit has proved itself to be a potent competitive weapon in the hands of some of the chain's principal competitors. It is also felt that credit service promotes customer loyalty at times when cash may be short and it also spurs sales of higher priced items to customers who would not make purchases if they had to pay cash. The experimental consumer credit plan is confined to about six of the company's outlets where all merchandise will be available on credit terms regardless of the amount of the purchase.

Standard Size Shipping Containers Wanted The American Standards Assn. is to set up a project for developing standards for shipping containers. At a recent meeting representatives of the Manufacturing Chemists Assn. and representatives of 39 other industries agreed that standard sized shipping containers should be developed for the efficient handling and shipping of goods and to properly use space on all common carriers. A committee from each of the organizations is to study standard dimensions for pallet containers, cargo containers and van containers. The dimensions of transportation equipment of common carriers are being studied to determine container sizes which will make possible the maximum coordination of the freight space allowed, whether the container is carried by truck, train, airplane or ship.

New York Chapter S. C. C. Hears Lecture on Alopicias A large and interested audience of chemists and other scientists listened attentively to the lecture by Norman Orentreich, M.D. on "New Research Studies on Apolicias" at the first meeting in 1958 of the New York Chapter of the Society of Cosmetic Chemists in New York, January 15. Harry Isacoff, chairman, presided at the meeting. Dr. Orentreich is chief of the hair clinic of the skin and cancer unit of New York University Post Graduate Medical School, New York University—Bellevue Medical Center. He conducted two general investigations: one into the causes of hair growth failure and typical male patterns of baldness; and second, into the effect of hair growth agents particularly the steroids. He has applied new techniques particularly appropriate to in vivo studies including skin grafts of the baldness pattern.

Verona Chemical Co. Merged with Pharma Changes Name

The Verona Chemical Corp., Newark, N. J. which merged with Pharma Chemical Corp. which it purchased last year has changed the name of the combined company to Verona-Pharma Chemical Corp.

New Carbinol Unit Increases van Ameringen-Haebler Capacity

van Ameringen-Haebler Inc. has completed a new Grignard reaction production unit at its Union Beach, N. J. plant to manufacture carbinols. The new addition will double the company's capacity to produce such organics as dimethyl phenyl ethyl carbinol and related compounds. The new project is a part of the company's one and a half million dollar expansion program.

New Home Permanent Launched by Procter & Gamble Co.

A new home permanent in which end papers are impregnated with waving lotion which retails for two dollars is being merchandised nationally by the Procter & Gamble Co.

Shulton Buys Aer-A-Sol Division of Bridgeport Bruss Co. Shulton Inc. has purchased the Aer-A-Sol division of the Bridgeport Brass Co. With the addition of the Bridgeport aerosol line it will broaden its coverage in the consumer field with established products such as Good-aire air refresher, Aer-A-Sol insecticide and several other products with a national reputation. George Schultz, president of Shulton Inc. announces that the new aerosol line will be handled by the Fine Chemicals Division and will be distributed through channels formerly employed by Bridgeport. This marks the entrance of Shulton in the consumer chemical field.

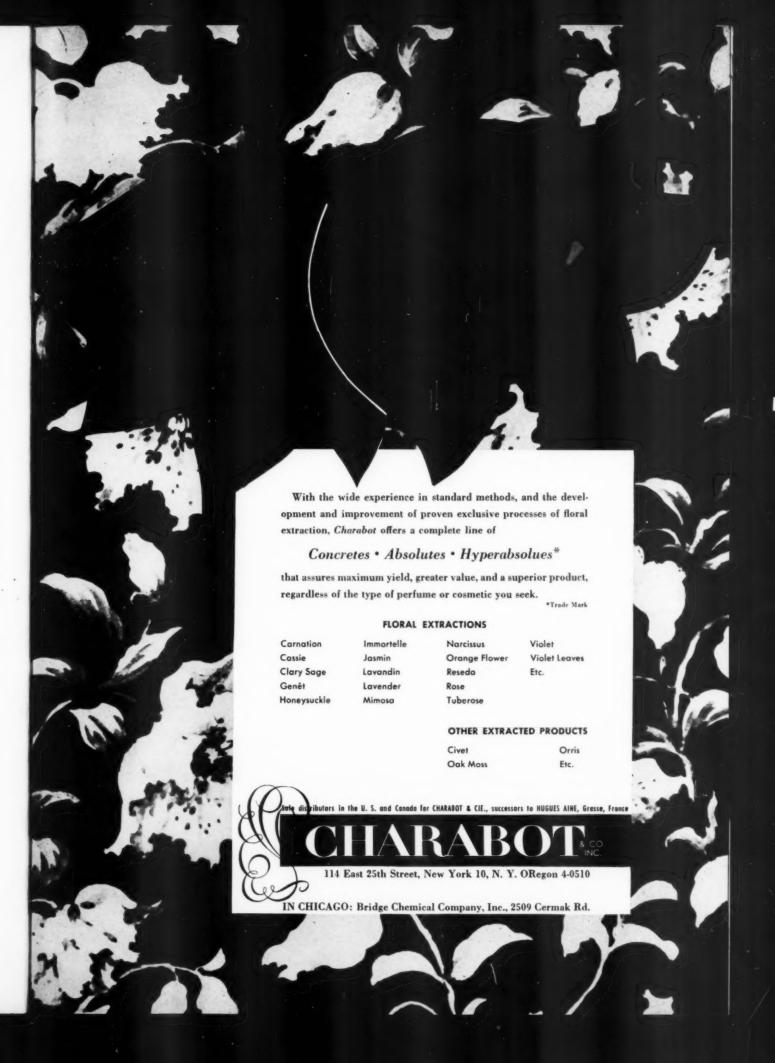
Forecast of 1958 Business January 30 by D. C. A. T.

A forecast of 1958 business conditions will be given to the members of the Drug, Chemical & Allied Trades Section of the New York Board of Trade January 30 at the Waldorf-Astoria hotel by Dr. H. E. Luedicke editor of the Journal of Commerce.

Conference to Consider Sweeping Changes in Economy Abroad A three-day conference to acquaint American companies with the effect of the European common market on their overseas operations and to prepare them for sweeping changes in the economy abroad will be held February 3, 4 and 5 at the Biltmore hotel, New York City by the International Management Division of the American Management Assn. Four Europeans who have been active in the implementation of the common market idea will take part in the program. Two A. M. A. workshop seminars will be held following the conference, February 6 and 7 at the Astor hotel for more intensive discussion.

Dates and Duration of State Legislative Sessions in 1958 Congress is now holding the second session of the 85th congress. Already 16 of the 18 states are convening in regular and special sessions. The states, dates and duration of the sessions follow:

Arizona	January 13th	60 days	Annual
California	February 3rd	30 days	Budget-revenue & emergency measures
Colorado	January 8th	30 days	Budget-revenue & emergency measures
Delaware	January 8th	Unlimited	Continuation of 1957 session.
Georgia	January 13th	40 days	Annual
Kansas	January 14th	30 days	Budget-revenue & emergency measures
Kentucky	January 7th	60 days	Biennial
Louisiana	May 12th	60 days	Annual
Maryland	February 5th	30 days	Budget-revenue & emergency measures
Massachusetts	January 1st	Unlimited	Annual
Michigan	January 13th	Unlimited	Annual
Mississippi	January 7th	Unlimited	Biennial
New Jersey	January 14th	Unlimited	Annual
New York	January 8th	Unlimited	Annual
Rhode Island	January 7th	Unlimited	Annual
South Carolina	January 7th	Unlimited	Annual
Virginia	January 8th	60 days	Biennial
West Virginia	January 8th	30 days	Budget-revenue & emergency measures



Emulsifiers

For ease of use — For dependable results — For solving difficult problems

## Tegacid...

Glyceryl Monostearate - Acid Emulsifying. For anti-perspirant deodorant creams, lotions and ointments - all greaseless, medicated formulations.

## Tegin...

Glyceryl Monostearate - Self Emulsifying. For neutral greaseless creams, lotions, ointments, suntan creams.

## Tegin 515...

Glyceryl Monostearate - Non Self-Emulsifying. Used in conjunction with auxiliary emulsifiers.

## Tegin P...

Propylene Glycol Monostearate - Self Emulsifying. For greaseless creams-brushless shave, foundation, suntan: lotions - foundation, suntan, ointments.

## Lanolin Absorption Bases PROTEGIN X.....ISO-LAN

For Creams, Lotions, and Ointments

 TEGOSEPT PRESERVATIVES
 ANTIOXIDANTS ESTERS OF PARAHYDROXYBENZOIC ACID PROPYL GALLATE ETHYL GALLATE

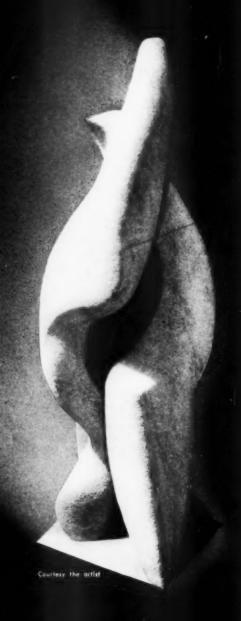
## Goldschmidt CHEMICAL CORPORATION

153 Waverly Place, New York 14, N.Y.

SALES REPRESENTATIVES

CHICAGO . LOS ANGELES . ST. LOUIS . MONTREAL . TORONTO





## THE LOVERS

Carved in marble

by Robert Rosenwald

Just as Robert Rosenwald brings to the age-old art of sculpture a new viewpoint. expressing one of mankinds oldest and most personal passions in fresh, unmistakably contemporary terms . . .

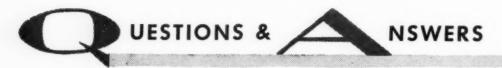
PFW brings to the ancient lore of perfumery a new science, creating modern fragrances, of fresh beauty and imagination, which have never existed before.

If you have not yet discovered how PFW's carefully balanced perfume bases or special compounds can give special significance to your products, we suggest you contact us, soon.





POLAK'S FRUTAL WORKS INC., MIDDLETOWN, N. Y. AMERSFOORT, HOLLAND . PARIS, FRANCE . BREMEN, GERMANY . BRUSSELS, BELGIUM . SOFLOR LTD. . PERIVALE, ENGLAND



### 1270: SAFE DEPILATORY

Q. We have been subscribers of your fine magazine for a number of years and find if most interesting and informative. Always of special interest is "Desiderata" and the Question and Answer section. If at some time there has been a formula offered on a safe depilatory, we have failed to keep the information. Can you supply such a formula or reliable sources from which formulas for this and other cosmetic items may be obtained? C. B. J., California

### 1271: HAND LOTION

Q. We are interested in obtaining a formula and working process for a hand lotion or cream, similar to Hinds or Jergens. We refer to the liquid cream and not the solid. A. R. O., Argentina

A. We must first tell you that the word "safe" is comparative and variable with the product All depilatories have a certain potential for harm, if they are improperly used. They have a very high pH unless you use the mechanical types. Any product with a pH of 10 or over can obviously burn the skin, and if allowed to stay on too long or if improperly used, some rather serious damage can result on some people. We do not suggest that small manufacturers make their own depilatories, but recommend that they buy these from a private label house. However, if you still insist on making your own depilatory, please let us know and we shall give you a starting formula, but keep in mind that there is a patent on the thioglycolate depilatory you will have to get a license under this patent. To make a thioglycolate depilatory properly, you will have to use either all glass or stainless steel equipment; otherwise the thioglycolate is dissipated and will fail to remove hair.

A. We do not know the composition of the lotions you mention. The following is a hand lotion formula you may care to try:

or midital you may care to try.		
Stearic Acid	3	lbs.
Mineral Oil	5	lbs.
Glycerin	5	lbs.
(3%) Quince Seed Mucilage	3.5	lbs.
Triethanolamine	1.5	lbs.
Alcohol	5	lbs.
Water	77	lbs.

Melt the stearic acid in the mineral oil and glycerin and heat to 70°C. Add this solution to the water containing the triethanolamine at its boiling point. Stir the mixture with vigor until the dispersion is uniform and then slowly until the temperature reaches 50°C. At this point stir in the quince seed mucilage and then the alcohol to which has been added the perfume. Stirring must then be continued until the lotion has completely cooled if the desired stability and consistency is to be obtained.

### 1272: TRILAZON

Q. We are very much interested in the product, "Trilazon" as mentioned in your International Encyclopedia of Cosmetic Material Trade Names. We would like to know the supplier of this product as it is not given in the book. S. P. T., Switzerland

A. The material Trilazon apparently is no longer being offered, or at least the supplier does not seem to be available. A similar material under the name of Oilzo is offered by the G. G. Harvey Co., Wells St., Saratoga Springs, N. Y. We suggest that you contact them.

### 1273: BETA METHYLTHIOL PROPIONATE

Q. We are anxious to contact suppliers of beta methylthiol propionate and obtain quotations. Would you please advise us of reliable suppliers in the United States? H. L. A., New Zealand A. In regard to beta methylthiol propionate, we are quite sure you are referring to thiolactic acid. To our knowledge, this material is not supplied by anyone in the United States on a commercial basis. This is made in France by Rhone Poulenc, 21 rue Jean Goujon, Paris 8e, or Gattefosse, 15 rue Constant, Paris. It is supposed to be equally as good as a thioglycolate for the purpose of hair waving or in depilatories.

## AMERICAN AROMATICS

- Perfume Compositions
  - Essential Oils
    - Aromatic Chemicals

24 East 21st Street, New York 10, N.Y. • GR7-6313

CREAMS LOTIONS

CHEMICALS

STICKS

GELS (alcoholic) SPRAYS



Whatever your anti-perspirant product . . . is geared to your requirements!

POWDERS

THREE SAFE, EFFECTIVE, EASILY INCORPORATED TYPES FIT EVERY PRODUCT VARIETY

## For CREAMS, LOTIONS, SPRAYS and POWDERS: CHLORHYDROL

(aluminum chlorhydroxide complex)

Available in 5 forms . . . granular, fine, medium, impalpable, 50%~W/W solution.

## CHLORHYDROL S-5

(aluminum chlorhydroxide complex-modified) In solid form for alcohol type...grease and gum free gels.

## For STICKS:

## CHLORACEL

(sodium aluminum chlorhydroxy lactate complex) Available as a 40% W/W solution for use in making Cologne type sticks.

REHEIS ANTI-PERSPIRANT CHEMICALS OFFER ALL THESE ADVANTAGES

- effective anti-perspirant action
- fine deodorant qualities
- non-destructive to fabrics
- non-irritating to skin
- · no buffering required

Write for free data and samples



REHEIS COMPANY, INC.

Manufacturers of Fine Chemicals BERKELEY HEIGHTS . NEW JERSEY



## FROM COAST TO COAST

Famous brands of fine cosmetics turn to AVON for manufacture and packaging

Your first consideration in the production of your own brand of cosmetics and toiletries is the quality and reliability of the company which manufactures them for you.

Long experience and the strictest quality standards have gained Avon a position of leadership in the making and packaging of many private brands doing business from the Atlantic to the Pacific.

You can broaden your sales scope on the cosmetics you now manufacture or on new

products, without added equipment investment, by entrusting the handling of production to the Private Brand Division of Avon Products, Inc. Modern, well-equipped laboratories in Suffern, N.Y., Morton Grove, Ill., Pasadena, Cal., and Montreal, Canada are ready to serve you. Avon's specialized skill and over 70 years of experience include every phase of cosmetic and toiletry production.

Join the other famous brands relying on Avon. Call or write for full information.

## AVON PRODUCTS INC.

PRIVATE BRAND DIVISION . 30 ROCKEFELLER PLAZA, NEW YORK

STRATEGICALLY LOCATED LABORATORIES IN SUFFERN, NEW YORK - MORTON GROVE, ILLINOIS - PASADENA, CALIFORNIA - AND MONTREAL, CANADA

## smooth as VEEGUM

Creams and lotions stabilized with **VEEGUM** feel smoother, creamier, and more luxurious to the skin . . . need less of the expensive oils and costly gums . . . and retain full body and consistency without deterioration on the shelf.

VEEGUM is a high-purity, inorganic thickener, emulsifier and suspending agent with thixotropic characteristics that make it the ideal conditioner. Veegum prevents product thinning, bleeding, and tackiness, even at higher than normal temperatures because it has the unique property of thickening slightly with heat. Veegum concentrations (of less than 1%) permanently stabilize many types of emulsions containing oils, fats, and waxes, preventing the phase inversion often encountered in formulations of this type. Veegum in aqueous dispersions is compatible with alcohols, polyglycols and similar organic solvents, producing quick-spreading liquids and lotions with superior aging properties, smooth, soft texture, and more attractive appearance.

**VEEGUM** is a safe, high-quality Vanderbilt product, nontoxic, nonirritating, odorless and tasteless, with an opaque white appearance. It is a complex colloidal magnesium aluminum silicate, developed from natural sources and highly refined under careful laboratory control to assure the highest degree of purity and uniformity. Send today for complete information.



Please send Technical Bulletin A53 

sample of VEEGUM
Please send information on using VEEGUM for:

(state application)

NAME\_\_\_\_

POSITION

(Please attach to or write on your company letterhead)

R. T. VANDERBILT CO., SPECIALTIES DEP'T., 230 PARK AVE., NEW YORK 17, N. Y.







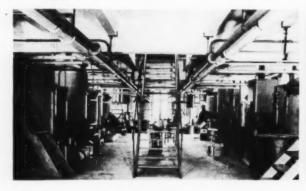
## CAPACITY







## OUALITY



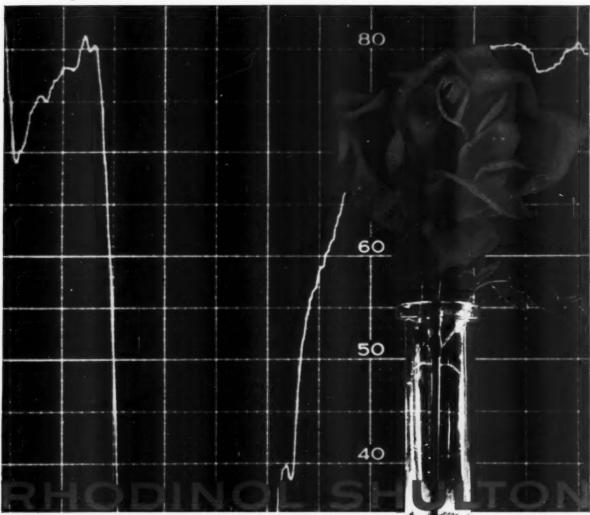






for the finest in floral and essential oils

BERTRAND FRÈRES, INC.
443 FOURTH AVE. NEW YORK 16, N.Y.



superb rose effects at half the cost of rhodinol ex-geranium

Rhodinot Shulton is superior to ordinary rhodinols in its freshness effect... its blending power... its compatibility with the finest perfume materials... and its stability in soap. • Shulton's advanced research combined with the perfumer's artistry makes possible this rhodinol of finest quality and constant character. And you can rely on the quality of Rhodinol Shulton because it is free of impurities, free of batch-to-batch variations. • Specify Rhodinol Shulton to procure these superb rose effects at only half the cost you might expect.





## SHULTON FINE CHEMICALS

DIVISION OF SHULTON, INC., 630 FIFTH AVE., NEW YORK 20, N. Y., CIRCLE 5-6263

Also available for the perfumer: BENZYL ACETATE • GERANIOL • HELIOTROPINE • ISOEUGENOL • LINALYL ACETATE RHODINOL SHULTON • NITRO MUSKS • VANILLIN, U.S.P. • VANITROPE® ... Market tested in successful products

## AEROSOL PRODUCT DEVELOPMENT

- Consulting
- Research
- Testing

The Safest Path to Successful Products

## THE REED RESEARCH CORP.

formerly Aerosol Process Co., Inc.

Winston H. Reed, Ph.D. President and Technical Director

Mill Street, Shelton, Conn.
Phone Ansonia-Derby
REgent 5-4858

## CONFIDENTIAL

A Company
devoted exclusively
to development
and research on Aerosols



## **AERO SCRIPTS**

Jack Pickthall\*



In discussing items of interest to the Aerosol industry one is always up against the use of trade names and specific companies. Often this means that a writer must reluctantly pass over an interesting piece of information in order to avoid a "plug." However, an item in the September issue of Soap & Chemical Specialties so coincides with my own experiences, that I feel justified in discussing it.

### Shellac for Hair Lacquers

It concerns a special grade of shellac for aerosol hair lacquers. The product is dewaxed and decolorised but the decolorization is undertaken by means of activated charcoal and not by the usual chemical bleaching methods. The makers claim that the residual salts in a normal bleached shellac combined with very small percentages of natural shellac wax, cause turbidity in alcoholic solution. They claim that their own product has a longer storage life in both dry and alcoholic solution than the normal type. Low moisture content and its attendant virtues is another claim.

We have always found that the age of a bleached shellac has a distinct bearing on its value as a hair lacquer. Old samples often produce cloudy solutions in alcohol and solutions clear when made, often precipitate with time. Further, we have proved that hair lacquers based on bleached shellac may lead to corrosion troubles in metal containers. These troubles have been overcome when the bleached shellac has been replaced by dewaxed but unbleached grade. We have been pretty certain that chlorine from the bleaching agents has been the root of the trouble and have for some time advocated the use of unbleached shellac. After all, the question of colour is of little importance in this class of product.

When Klitsch and Graham (Soap & Chemical Specialties, September, 1957) headed their article "Non-Aerated Aerosols," they did so with their eyes open. They define such products as "those which are dispensed from a pressurized container with little or no mixture of the gas with the product dispensed." They

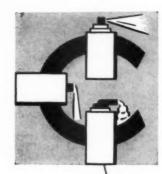
discuss two approaches to the problem: (1) the use of films in the form of bags, pouches or diaphragms to separate mechanically product and propellant, (2) the use of insoluble gases. The first type was discussed some time ago by Herzka (Journal of the Society of Cosmetic Chemists, July, 1956). His particular remarks applied to the British Patent 740,-635. Klitsch and Graham considered that the polyester films offered the most promise as far as gas retention was concerned. Further, they considered this type of product as most promising for tensile strength. In their experiments they employed a film 0.5 mil thick. They discuss different methods of anchoring the bag.

## Contribution of H. R. Shepherd

H. R. Shepherd is rarely out of the aerosol news and the grant on behalf of his company interests us. The purpose of this grant to the Philadelphia College of Pharmacy and Science is to "further the investigation of basic physical and chemical relationships between propellants, medicinal agents and vehicles." The project is to be directed by Dr. Martin Barr and Dr. Linwood.

I note too, that Mr. Shepherd has written a chapter in Edward Sagarin's new Book "Cosmetics—Science and Technology." The chapter, "Aerosol Cosmetics" runs from page 787 to 840—quite a mammoth effort. In his introduction he mentions that most modern tests on cosmetics have failed to even mention Aerosol products, despite the fact that the retail level of these products is over one hundred million dollars per year and this, without a serious exploita-tion of the potentials. In his definition he makes three categories, (a) spacesprays, (b) surface-coatings, and, (c) aerated foams. He describes space sprays as rather finely divided sprays exhibiting particle size range of less than 50 u. Surface coatings are coarser, wetter and designed to form continuous films. Space and surface sprays range from fine mists to wet films and take in hair-sprays, deodorants, perfumes and colognes. Under Aerated foams, he mentions shaving creams, suntan foams and hand creams and points out that there are two types of foam products; one where the

\*Chief Chemist, Polak & Schwarz, England, Ltd.



## Experience\*

in Aerosol Filling and Product Development

\* PIONEERS... since 1946



MAIN OFFICE: DANVILLE, ILL. . N.Y. OFFICE: 527 LEXINGTON AVE.

COLOGNES . HAIR SPRAYS . INSECTICIDES . DEODORANTS . SHAVE CREAMS . CLEANERS

& Aromatics

January, 1958 21



## TOP-DRAWER SITES for COSMETICS PLANTS

Before you build or relocate anywhere, consider fast-growing Long Island. "Stay-put" manpower...unlimited water and power supply... direct highway and rail access to the Port of New York. These are only a few of the advantages available to you in specially designed industrial parks and individual plant sites. Even the tax situation works to your advantage in local townships seeking new industries. Let's get together soon!

## Write for Information

Top management of the Long Island Association will deal with you directly and confidentially to set up a date that suits your convenience.

## LONG ISLAND ASSOCIATION

Garden City Hotel, Dept. C Garden City, Long Island

Live...Work...Play...on LONG ISLAND!

## JUST OFF THE PRESS! "INTERNATIONAL ENCYCLOPEDIA OF COSMETIC MATERIAL TRADE NAMES"

by Maison G. DeNavarre

Covers more than 3,000 important trade names that every chemist, supplier, and buver—in fact, every member of the cosmetic industry—should know.

### NCLUDES

- a quick, concise description of each material.
   the names and addresses of the suppliers of these materials.
- a complete, cross-indexed classification of the various types and uses for the materials.

Over 350 pages-Complete Indexed-Cloth Binding

-Only \$7.50 Postpaid!

Order today from:

AMERICAN PERFUMER & AROMATICS

Book Div. 48 West 38th Street New York 18, N.Y. foam is ejected from the valve as it is actuated and a second where the contents come forth as a stream and foam on contact with a surface. This second type is known as a spray or lazy foam. The history is extremely interesting and well written and makes quite a story.

### **Aerosol Patents**

I remember, some years ago, Mr. Shepherd spoke to the British Cosmetic Society and said that the Aerosol principle had been used for many years and that this fact had precluded the chance of modern day patents. When you read of the Helbing and Pertsch patent of 1899, it makes me wonder more and more why some of the recent patents were granted. As Mr. Shepherd says, "The reader familiar with modern aerosol technology will recognize how close Helbing and Pertsch were to the products destined to appear on the market almost half a century later." As the patent list grows through the years, it can be seen that this aerosol technique is far from new and if you exclude fluorinated propellants, everything seems to have been covered many years ago. Propellants, valves and containers are all described. Perfumery atomizers were patented in 1903; antiseptics in 1921. In 1931 and 1933 Cosmetics had their first real mention. Listen to this:

"When the desired method is to be used, for example, for eau de Cologne, this material obtains the novel property of giving a spray which is considerably cooled in relation to the atmospheric temperature as a consequence of the expansion of the added condensed gas."

In the same patent occurs:

"Cosmetic products such as for example, liquid or solid brilliantines, pomatums, vaselines, creams, toilette liquids and the like are in accordance with the present method handled in a more practical and hygenic manner than at present."

This particular patent (Rotheim) suggested new gases and envisaged others and finally, just to prove that recent thoughts were not so original, he put liquid soap into his package. The introduction of the fluorinated propellants is detailed and to end this thrilling section of Mr. Shepherd's work, come more patents from 1945 onwards and as far as I can see, just about all forseeable cosmetic preparations were covered years ago, including our old friends, perfumes, hair lacquers and shave creams. Special congratulations on this section Mr. Shepherd.

Further sections are Principle and Mechanism, Containers. Valves, Propellants, Concentrates, Regulations, Production (Cold and Pressure filling), Formulation, Conclusion, Glossary of Terms and References.

Formulation covers fourteen pages and deals with Hair products, Deodorants, Antiperspirants, Fragrances, Sunscreens, Shaving Creams and Accessories, Shampoos, Creams and Lotions, Nail preparations, Powders and oral preparations. This important section is of great interest to Cosmeticians and shows

imagination. The formulae have the unusual property of being of immediate value to experimenters. Sincere congratulations on a really excellent presentation of the Aerosol story.

Looking through our perfumery, cosmetic and pharmaceutical journals, I am struck by the conspicuous absence of advertisements for aerosol products. At Christmas time I could find precious few examples, although a "talc foam" is featured.

## Aerosols in the British Market

Some of the aerosols to be found on the British market are featured in A. Herzka's "Aerosols in Great Britain" (Aerosol Age, August, 1957). I noted the absence of some of our big sellers, but this is no doubt due to the fact that Mr. Herzka has attempted to give everyone at least one presentation. Mr. Herzka's survey of the British market should be of great interest to people in the U.S. He discusses some of our problems, our hopes and our fears and claims with some justification, that in isolated cases we have the edge on our American friends. His guess of twelve million units for 1957 would have had my blessing a few months ago, but now I am not so sure. However, he is in a better position to judge them and I hope he is right. My own feeling is that the cosmetic and pharmaceutical people have not accelerated their programmes as might have been anticipated.

At some time or other most of us have been worried about the fire risks of our aerosols and it was with interest that I read of the Pressurized Fuel Package (Aerosol Age, August, 1957). A butane blend fuel is packed to provide a barbecue lighter, a patio light, portable stove fuel and a blow torch. Its claims are for safety advantages over conventional types of fuel, handiness and modest cost. It is pretty safe to say its sales potentials are much greater in America than in Britain.

## Leg Make-Up

An item in Drug and Cosmetic Industry, September, 1957 caught my eye. It is headed "Why not Leg make-up?" A Dupont survey has revealed that nylon stocking makers are losing business due to the fact that women feel the sexual significance of their legs is declining. I remember making a leg make-up cream which became a really big seller. It was based on an easily spreading cream base and contained titanium dioxide and inert pigments. It gave a most beautiful effect on the legs but of course, lost its sales appeal when stockings were once more available. My point is that I agree with the Drug and Cosmetic suggestion that legs should come under the jurisdiction of the cosmetician. Many girls run around bare legged and a touch of makeup would add to their charms. It should be easy enough to put up a leg spray in aerosol form. Any takers?

Any government that is big enough to give you everything you want is big enough to take everything you have got.

—The Item



## the new 'ROCHE' Aromatics offer the perfume designer



## and manufacturer:

- previously unattainable stability in quality, supply, and price
- uniformity of raw materials never before achieved
- unexplored possibilities for creation of new interesting fragrances
- opportunity for long-range planning and purchasing

## now available

## LINALOOL 'Roche'

A purer material than any previously offered to the industry. Free from the impurities present in the linalool from natural sources. Contains no other alcohols or terpenes. Olfactorily pure and floral in character. No residual 'after odor.' Unusually stable in soap.



A very pure linalyl acetate containing no other esters and no terpenes. The Roche special process also precludes the formation of any other alcohols during the esterification process. Olfactorily pure and clean in odor. No residual 'after odor.' Unusually stable in soap.

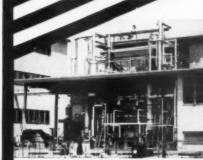
## GERANYL ACETONE 'Roche'

A completely new synthetic aromatic. Possesses a soft green odor with a rose note. A good base for synthetic lavender, geranium and rose bouquet. Stable in soap.

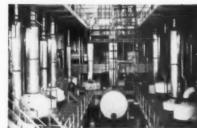
### NEROLIDOL 'Roche'

Pure nerolidol. Light balsamic odor. Excellent fixative. Blends well with any perfume compound.

Detailed information on each product will be furnished on request.



Part of the specialized manufacturing facilities for maintaining uniformity of 'Proche' Aromatics



Uniformity assured by controlled production



Constant control of uniformity.

Continuous olfactory control.



'Roche' Aromatics

are available through

principal essential oil distributors

AROMATICS DIVISION

HOFFMANN-LA ROCHE INC . Roche Park . Nutley 10 . New Jersey . NUtley 2-5000

New York City: OXford 5-1400



## Skillful Hands

A successful fragrance is the result of a composite of many skills, technical, creative and the indefinable skills resulting from years of experience and tested judgment.

When you select your next fragrance, let van Ameringen-Haebler serve your needs.

Every aromatic material used to produce a VAH
perfume oil, must meet rigid standards of acceptance.

Here, the infra-red spectrogram of an
aromatic chemical just produced, is being compared with
the standard control graph by a skilled spectroscopist
in the Control Laboratories at the
VAH Union Beach Plant.



521 WEST 57th STREET . NEW YORK 19, NEW YORK

van Ameringen-Haebler, S.A.R.L., Courbevoie (Seine) France • van Ameringen-Haebler (Canada), Ltd., Toronto 1, Ontario, Canada

## Meranol

The embodiment of perfection in Geraniol. As in architecture there is grandeur in simplicity,

so in Meranol the removal of the obscuring impurities reveals the essential beauty of

Geraniol. If the costly research and development devoted to PURE PERFUMERY CHEMICALS

had been expended on Meranol alone, the result would have justified the effort.

Full scale commercial production today permits us to offer a pure Geraniol

at a price little above that of the standard product. Regardless of the

source from which it is obtained, exhaustive purification produces

a constant result - the perfect Geraniol.

ONE OF THE ABRAC PURE PERFUMERY



CHEMICALS

ABRAC

A. BOAKE, ROBERTS & COMPANY LIMITED 'LONDON' ENGLAND

AGENTS FOR U.S.A. TOMBAREL PRODUCTS CORPORATION '725 BROADWAY 'NEW YORK 23

## DESIDERATA

Maison G. deNavarre, F.A.I.C.



### What's A Good Antioxidant?

That is the question asked every so often. The answer is hard to give. The variables are too many. Some work best with animal fats, others with vegetable fats.

The alkyl gallates tend to discolor especially in the presence of traces of iron and in alkaline products. The same holds for NDGA. Hydroquinone, largely in disuse, discolors somewhat too in alkaline creams. That leaves the thiodipropionates, BHA and BHT among the best known products. Odor is a problem with all. But discoloration is lowest in this group.

Discoloration may sometimes be controlled by traces of metal scavengers, acids such as citric, phosphoric or EDTA. A change in pH from alkaline to faintly acid can control color, too.

Since some antioxidants lose their activity at elevated temperatures in the presence of water, be sure to use one that doesn't. Preferably keep the product faintly acid by using a synergist, such as the acids mentioned above.

Worth trying are the blends sold in a glycol solution. They dissolve readily in oils and fats. Don't overlook the value of water soluble antioxidants, such as ethanolamine, polyols and certain polyphosphates.

## Diethyl Sebacate

It is an oily material, with a slight, almost fruity odor, melts at 1.3°C., and has a viscosity of 6.1 cps. according to one supplier. With a free acidity less than 0.05 per cent, it is as pure or purer than many edible vegetable oils.

Diethyl sebacate is literally unknown in the U. S. It has been used in Europe for a good many years as a coupling agent for oils and fats, for example. A mixture of 10 cc. each castor and mineral oils is rendered clear by 5.3 cc. of diethyl sebacate, while it takes 7.4 cc. of isopropyl myristate or 10.2 cc. butyl stearate to produce a clear solution.

The thick, oily property of the material makes it interesting for use in lipstick, eye shadow, various cosmetic creams and lotions, as well as a perfumery solvent. Its low surface tension (33.2 dynes/cm.) and poor water solubility (0.003 per cent v/v) make it an interesting bath oil base.

Not to be overlooked are its solvent action on so-called bromo acid. It dissolves 1.3 times as much tetrabromo fluorescein as oleyl alcohol and almost seven times as much as castor oil.

## Royal Jelly

It is a sad commentary on cosmetic science when top chemists in this industry can agree on only three things about Royal Jelly and they are: (1) It is a sales gimmick; (2) It contains nothing harmful; (3) It is not a "chemical" but a natural product. That's the sum essence of a story recently appearing in Chemical Week. No one knows what it does for the skin or the human being—if anything. The so-called scientific reports are all justly questioned

Creams and lotions are known to contain from 150 to 200 milligrams per ounce of product (approximately 0.7 per cent max.) Royal Jelly contains about 65 per cent of water, or slightly more. Niacin and pantothenic acid are the main "B" vitamins present. For a fraction of the cost, an exact vitamin potency can be obtained from synthetic material or natural "B" concentrates.

There is no standard for the product. How do you know what you are buying is truly Royal Jelly? It would be awfully easy to adulterate. What would you test for? The range in all material components is wide.

Indeed, there is some question about Royal Jelly stability when not refrigerated. Even the refrigerated material loses some of its substance responsible for the development of Queens following ingestion of the milky fluid in the larvae stage.

While estrogenic activity has been claimed for the material, a report by Hinglais, Hinglais and Gautherie in 1956 shows that Royal Jelly "produced no gross or microscopic changes in the ovaries, uterus or vagina of immature rats."

### Notes

Don't know how he does it—first golfing with Bob Hope—then having no one less than Senator John Kennedy open the United Fund drive at Ed Breck's Shampoo head-quarters—incidentally, Breck went way over the top on their quota... Had a surprise visit from Bonne Bell's, Bob Gould—looks better than ever—but don't be fooled, there ain't no glass in his eye glasses—just frames!... One supplier of BHT is suggesting it as an antioxidant for polyethylene.... The Dow Diamond Christmas issue has an in-

## Deauty of fragrane ...



## ac ..made-to-measure for your success!

fragrance of outstanding beauty adds
the distinctive character—the individuality—
that can bring success to a perfume or
cosmetic...or a complete line!

Givaudan's demonstrated creative skill, its unusual variety of fragrant materials, its world-wide affiliations and its market know-how are all coordinated to bring you fragrances of unique new beauty and originality—made-to-measure for your success.

GIVAUDAN-DELAWANNA, INC. 330 West 42nd Street • New York 36, N. Y.



AN INTEGRAL PART OF THE CONTAINER WHEN MARYLAND GLASS TAKES **OVER YOUR DESIGN PROBLEM!** 

When you drop a packaging problem in our lap, the end result is more than a glass container. It is an idea . . . born of restless imagination, shaped by skilled hands, backed by years of sound experience. Our creative staff gives you a selling package that packs well, ships well and pushes your product on the shelf. For a successful solution to your design problem, contact MARYLAND GLASS CORPORATION, 2147-53 Wicomico St., Baltimore 30, Md.



### STOCK DESIGNS

-A variety in blue or flint glass and a complete range of sizes is ready for immediate shipment.

PACK TO ATTRACT IN



teresting story on silicones in cosmetics. . . . Best wishes to Max Factor's, Paul Jewel for his drive for additional colors for use in eye make-up. . . . You know, face pow-der and liquid make-up are used around the eyes by many women and they contain organic lakes-Never heard of any damage following such use either-some gals even use rouge around the eyes. . . . There was more work done than appeared on the surface in the Tice and Barr paper on preservatives given before the S. C. C. in December—Speaker Tice's easy manner summarized results of hundreds of careful tests made over a number of years. . . Speaking of preservatives, spent an interesting evening with the Jean Martins and I discovered that they, too, have encountered the inactivation of preservatives by nonionics several years ago. . . . Glidden are getting deeper into aromatic chemicals. . . . Van Dyk's, Walter Mueller was telling me about some new emulsifiers-incidentally, they make a polyglycol ester of linoleic acid that sounds interesting. . . . DuPont have announced a new propellent, Freon C-318, an octa-. Both the fluorocyclobutane. . . T. G. A. Scientific Section and S. C. C. meetings had record crowds -more and more new faces.

flint

ange

## **Book Reviews**

AESTHETISCHE MEDIZIN, Band 5, LICHTSCHADEN UND LICHTSCHUTZ DURCH KOS-METIKA, by Mellmut Ippen, Dr. Alfred Huthig Verlag, Heidelberg, Germany. 1957. 88 pages, 6 x 9 inches, illustrated. Priced D.M. 12.

This is one of a series of six volumes by various authors on esthetic medical aspects of dermatology with its many facets.

The present volume deals with light caused diseases and protection afforded by cosmetic preparations.

There is a review of the photosensitizing part of the solar spectrum and common diseases associated with light some caused by cosmetics. This leads up to a discussion of chemicals that filter out the sun's rays. A system of protection designations is discussed. A table lists many trade named sunscreen preparations together with their index of protection. Over 400 literature references are listed.

If you are interested in sunscreens and cosmetic photodermatitis, you will want this book for your library.—M. G. deN.



## EXTRACTED BY OUR EXCLUSIVE BUTANE PROCESS

that gives you all the magnificent fragrance that only the naturally derived oils can impart. Extracted from Gardenia, Muguet and Lilac.

We'll be glad to submit samples of FLOWER OILS • OAK MOSS EXTRACTS IRIS PRODUCTS • RESINOIDS • SPECIALTIES

P. Robertet, Inc.

221 Fourth Avenue, New York 3

NEW YORK . LONDON . PARIS . GRASSE . TOKYO

## Aromatic Products, Incorporated

Specialists in the creation of

PERFUME

**ODORS** 

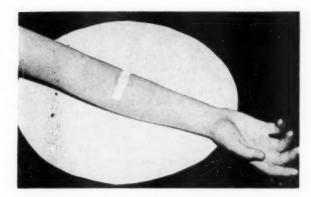
the subtle touch of the Expert Perfumer will enhance it with the perfect fragrance that it deserves. That's why it's so important to entrust the perfuming of your products to a Company who specializes exclusively in creating the right fragrance for each type of product. For only by specializing in perfumery alone, can one achieve the experience and "knowhow" that marks the true perfume expert. Our Laboratory and staff are ready to work with you.



ODUCTS, Incorporated . 235 FOURTH AVENUE . NEW YORK 3 . MEMPHIS . PITTSBURGH . LOS ANGELES . BOSTON . FORT LAUDERDALE

Member . Fragrance Foundation

Whatever your product,



## Use of the Patch Test

## in Estimating Hazards to the Skin





HARRY L. RUBENKOENIG and ROBERT A. QUISNO\*

Reprinted from the Proceedings of the Scientific Section of The Toilet Goods Assn., No. 28;6 (1957)

WHENEVER use of a product involves contact with the skin of the user the question of effects on the skin arise, even though the material may cause no systemic toxic effects. Introduction of new materials and substantial changes in formulation of old products necessitate appraisal of these hazards. The manufacturer who rejects this responsibility to the public may risk not only the failure of his new product but also a loss of confidence in his entire line.

In the early stages of an investigation of these properties much useful guidance can be obtained from animal tests. Certain standard tests are widely used, and afford results useful in a preliminary classification. However, these do not give the final answer. In general, laboratory animals are less vulnerable to the irritating effects of chemicals on the skin than humans, and among humans there is a tremendous variation in degree of susceptibility. For confidence in the validity of the results, tests must be made on a large number of humans to establish the normal human response.

## **Animal Tests**

1—THE RABBIT EYE TEST is of specialized application. Its usefulness is confined to the safety testing of materials which may in use get in the eye, such as shampoos, hair dyes, and eye medications. Effects on the mucosa of the eye do not necessarily parallel effects on the skin. We have sometimes had a great deal of irritation appearing in a human patch test using samples that had caused practically no effect in the rabbit eye.

2—THE RABBIT PATCH TEST, on abraded and unabraded skin, has been of disappointingly small assistance to us in the evaluation of practical levels of irritation. In general our experience has been that a positive reaction



Courtesy Almay, Div. of Scheffelin

by the rabbit indicates that the test material is too strong an irritant for test on humans. A negative result, however, does not warrant an assumption that the material will not cause excessively severe reactions in a human patch test.

3—THE INTRADERMAL INJECTION of the sample in the rabbit appears to be a somewhat better guide. We have repeatedly found that test solutions causing erythema and edema in a radius of 5-10 mm. from the site of intradermal injection of 0.05 ml. cause sufficient mild to moderate reactions in human patch tests to facilitate comparisons of samples. If there is also at the injection site a zone of necrosis exceeding a millimeter or two, then we are likely to meet with an excessive amount of reaction in a human patch test.

4—THE GUINEA PIG TEST FOR SENSITIZATION is well standardized and much used. Any new material whose potential as a sensitizer is unknown should be tested by this procedure. If the result is positive the material will almost certainly sensitize man. On the other hand, a negative result in guinea pigs is by no means an assurance of safety in man, so far as contact dermatitis is concerned.

In testing for sensitization in man there is some risk of producing unpleasantly severe reactions. Consequently we made a limited study of swine and monkeys

\*Hill Top Research Institute, Inc., Miamiville, Ohio



Closed notrhes applied to the arms

as test animals, hoping that one of these species would more closely approach man in its susceptibility. A test material was chosen which consistently sensitized humans strongly, but failed to sensitize guinea pigs. Our hope was abandoned when several months of patch applications and intradermal injections failed to produce any evidence of sensitization in these two species.

In summary then, animal tests are useful for rough preliminary evaluations. They will eliminate from further expensive testing many of the primary irritants and sensitizers that are too potent for consideration. Nevertheless the final evaluation must be made on human skin.

### **Human Patch Testing**

The patch test usually can provide the basic information needed for evaluating the dermatological safety of a product. Tests under use conditions may be desirable or necessary for some types of products, but they are often difficult to control and sometimes inconclusive. Usually a well-designed patch test will not only serve as a safety test but also serve for the selection of the least irritating of a group of alternate formulations.

Proper design of the patch test depends upon due consideration of the following points:

1—The human is poorly standardized as a test animal.

2—The usual test patch causes more reaction than most types of use exposures.

3—The practical interpretation of test results often depends on comparisons between samples.

4—Repeated exposure of the same area at short intervals causes more or less increase in skin response, the rate of increase varying with the nature of the sample. This effect is called "skin fatigue" in recent literature. 5—The development of hypersensitivity to contact allergens requires an incubation period.

The responsiveness of human skin to irritants varies greatly among individuals and from time to time in the same individual. Different areas of the body vary in resistance to irritants. In patch testing a wide variety of materials we have seen no evidence of correlation of reactivity with sex, complexion, hair color or apparent thickness of the skin, although sun-tanned skin is usually more resistant to irritants. Our test groups have

often included some adolescents and some elderly subjects with the dry, papery skin of senility. Both these age brackets appear to be more resistant than those in between. There appears to be a marked seasonal variation in susceptibility to irritants. The same sample will cause a greater incidence and severity of primary irritation in winter or early spring than in summer or fall.

Most patch testing is performed with the "closed" test patch. The test material is held to the skin with the covering bandage sealed to the skin on all sides. The bandage is unperforated and usually resistant to the passage of air or water by virtue of its adhesive coating. A thin sheet of rubber or plastic may be inserted between patch and covering bandage. This patch may be left in place as long as 48 hours. The resulting irritation effects are far more marked than under use conditions in which the material is left open to the air after being applied, or is rinsed or wiped off after brief contact.

In one of our tests we applied a rather irritating aqueous test material to 30 subjects. Each subject received two patches. One was a conventional closed patch. The other patch was open on two edges and had perforations through its covering. Twenty-five subjects had reactions to the closed patch. Only seven reacted to the open patch. All subjects who reacted at all responded more strongly to the closed patch than to the open one. A still more striking difference was found in testing a proposed new type of hair dye. Applications simulating use three times a week for five weeks on a small area behind the ear caused no reaction at any time. Closed patch applications on the arms caused very strong primary irritation on all subjects and subsequent applications of the material diluted tenfold led to symptoms of sensitization in many.

Use conditions for an antiperspirant might appeal to parallel closed patch conditions fairly closely. In a series of tests of such preparations no irritation resulted from use in the axillae on four successive days, while a few of the same samples caused a fairly high incidence of mild to moderate reactions in patch tests.

Obviously then, patch test results do not afford a direct prediction of primary irritation under conditions of use, unless the results are completely negative. However, a reasonably reliable prediction can be made if a properly selected reference sample is tested simultaneously. The basis upon which the reference sample is chosen may vary according to the objective of the test, but in most cases it should be a material with a market history establishing that it has a satisfactory low irritation potential in the use in question, and it should resemble the test sample in chemical composition as closely as feasible. When the test is concerned with the effect of a single ingredient in a mixture the reference sample may consist simply of a blank mixture from which the ingredient under test has been omitted. Completely negative results can not afford a basis of comparison among the test samples. Therefore, if possible, the conditions of the test-concentration of test material and patch exposure time-should be adjusted to result in some positive reactions.

Many materials exhibit a greater or lesser degree of "skin fatigue." That is, skin recently exposed to the material is more reactive to further contacts with the same or other irritants than is untreated skin, even if no visible reaction has been produced. This effect is distinguished from sensitization by its gradual course of appearance, its lack of specificity, and its subsidence after repeated exposures are discontinued. The intensity of this effect may vary considerably among samples that cause equal amounts of slight irritation on initial

contact. Thus samples that look equal after the first application may show decisive difference after several. Therefore, serial patch applications on the same site give fuller information than a single application.

#### Sensitization

So far as the safety of the public is concerned, the most important use of the patch test is the detection of sensitizing materials, or contact allergens. A primary irritant makes itself felt immediately. Its effect is short-lived and the user can easily identify the source of his trouble. But a product containing a sensitizer may be used uneventfully for weeks. Then one morning the user finds he needs the services of a dermatologist, and may have difficulty in determining what is causing his discomfort.

The contact allergies arising from contact with certain chemicals may produce very serious skin eruptions, as anyone who has had a good case of ivy poisoning can testify. For convenience this is referred to as "sensitization" in this paper and in much of the literature. It should be remembered, however, that it is only one of several types of allergic sensitization. Its principal distinguishing characteristics are that it can be caused by materials other than proteins, its main effect is a localized skin eruption, and reaction symptoms make a delayed appearance, from several hours to several days after contact with the allergen.

The first contact with a sensitizing agent may evoke little or no visible response. With repeated contacts there occurs a sudden change in the test subject, who abruptly begins to react strongly even to lesser exposures than originally tolerated. When this change occurs the areas of earlier recent exposures may flare up with strong reactions. After the first contact with the material a minimum incubation period of about 10 days is required in most subjects for the development of this hypersensitivity.

The first widely accepted patch test procedure for evaluating sensitizing activity was introduced by Schwartz (1) and later set forth in greater detail by Schwartz and Peck (2). This employs two patch exposures about two weeks apart. In large groups of subjects a sensitizing material will cause a sprinkling of reactions to the second patch sufficiently more severe than the same subjects' reactions to the first patch to permit recognition of sensitizing activity. As work was continued in this field it was learned that additional preliminary patch applications increased the incidence, and often the severity, of sensitization reactions appearing at the last, or challenge, application. This experience has led to the recent recommendation by Draize (3) of the repeated insult patch test. In this procedure a series of ten applications is made at 2-day intervals. Ten to fourteen days after the tenth application a challenge patch is applied. Such a test will detect a weak sensitizer that might not be recognized from the results of the older two-application test, and will ring a much louder alarm for a strong sensitizer.

An example of the latter may be found in our experience with two sensitizing materials tested by two procedures:

Method I—Two patch applications two days apart, followed by challenge two weeks later.

Method II—Three applications a week for three successive weeks, followed by challenge ten days after the ninth application.

In tests by Method I, sample A caused incidences of apparent sensitization of 21% and 12% in groups of 160 and 223 subjects, respectively. When tested by Method II on 28 subjects, A caused sensitization in

86%. Sample B was tested both in plain aqueous solution and in various formulations a number of times. Two tests by Method I on over 200 subjects each resulted in 7% and 21% incidences of sensitization. In three pilot tests on groups of 16 and 19 subjects, no subjects were sensitized in two groups and only two in the third. Method II was then employed in a series of pilot tests of various formulations of B. Twenty-one such tests were made on groups of eight to twelve subjects each. In this series the incidence of sensitization ranged from 25% to 90%, with an average of 60%. With both samples many of the positive challenge reactions produced in Method I were of borderline character, little stronger than simple erythema. A considerably higher proportion of the reactions obtained with Method II were unmistakably severe.

In repeated insult patch tests sensitization reactions often begin to appear during the second and third weeks. Occasionally, however, we have seen a test material produce no reactions until the challenge in the fifth week. Such a feeble sensitizing action would not have been manifested at all in a test by Method I, which extends over only two and a half weeks.

In our patch testing we have usually re-applied patches to the same site each time, in order to study skin fatigue and to facilitate the comparison of several samples on the same subject. We have found that challenge patches on the original site often cause much stronger reactions than a duplicate patch applied to a previously untreated area nearby, indicating that skin fatigue may persist longer than the ten days or more elapsing between the last serial application and the challenge. In the routine use of such duplicate pairs of challenge patches we have seen many instances in which the response to challenge on the original site would have suggested sensitization but for a complete lack of response on a fresh site. Occasionally a borderline reaction (papular or mildly edematous) to challenge on the fresh site cannot be confirmed on rechallenging after several weeks, suggesting that some temporary influence not yet understood may give a false indication of sensitization in the test.

#### Recommendations

On the basis of the considerations which we have discussed we recommend that when a new material is to be tested for hazards of irritation and sensitization the investigation should include the following steps.

1—Animal testing, to eliminate some of the most hazardous materials and afford guidance in setting up exposure conditions in human tests.

2—A pilot repeated insult test on about a dozen subjects, for help in planning further patch testing and as a safety measure to prevent exposing large numbers of subjects to unexpectedly active materials.

3—Further repeated insult patch testing, with an appropriate reference sample included for comparison, when possible, to evaluate primary irritation, skin fatigue, and sensitizing activity. A total of 200 subjects has been recommended by Dr. Draize (3) as appropriate for the evaluation of skin sensitizing potential. A smaller number, as few as 50-60, will usually afford a reasonably reliable evaluation of primary irritation and skin fatigue effects.

#### REFERENCES

1—Schwartz, L.; Jewnal of Investigative Dermatology. 4: 459-470 (1941).
2—Schwartz, L. and Peck, S. M.; Public Health Reports, 59: 546-557 (1944).
3—Draize, John, H.; Food Drug Cosmetic Law Journal, 10: 726, 727 (1955).
Reprinted from the Proceedings of the Scientific Section of The Toilet Goods Assn.
No. 28:6 (1957).



Dr. John H. Draize, United States Food and Drug Administration Branch Chief, receiving Society of Cosmetic Chemists Medal Award from retiring Society President Sabbat J. Strianse.

# S.C.C. Honors Dr. John H. Draize

Coveted medal presented by President Sabbat J. Strianse to noted government official at annual meeting. . . . New officers for 1958

For his scientific contributions in establishing adequate tests and methods to assure the safety in use of new and various old cosmetics, Dr. John H. Draize, chief of the Skin Toxicity Branch, Division of Pharmacology, U. S. Food and Drug Administration received the coveted Society of Cosmetic Chemists ninth medal at the annual banquet of the Society in New York on the evening of December 10. The speaker for the medalist was Dr. G. Robert Clark, chief of the Division of Cosmetics, U. S. Food and Drug Administration. The presentation was made by President Sabbat J. Strianse and after the acceptance by Dr. Draize, the hearty applause by the audience was apt recognition of the wisdom of the choice for the tenth medal award.

Following a busy morning session at which four papers of vital interest were presented, the following new officers for 1958 were installed by President Strianse:

President: James H. Baker. Mr. Baker is a charter member of the Society and is head of Gar-Baker Laboratories.

President-elect for 1958: Savery F. Coneybear, who will assume the presidency in 1959. Mr. Coneybear is director of research of the Colgate-Palmolive Co.

Secretary: Robert A. Kramer, Evans Research & Development Corp.

Treasurer: Dr. Walter A. Taylor, a charter member of the Society, who is associated with the Dispergent Co. Chairman of Executive Committee: Sabbat J.

Chairman of Executive Committee: Sabbat J. Strainse, retiring president, who is associated with Shulton, Inc.

Executive Committee: George G. Kolar, Kolar Laboratories; Dr. Kenneth L. Russell, Colgate-Palmolive Co.; Dr. Donald H. Powers, Lambert-Hudnut Div., Warner-Lambert Pharmaceutical Co. and Dr. Paul G. I. Lauffer,



Staffen Arctander, center, who is conducting courses in the New Jersey State College on compounding perfumes confers with Pierre Bouillette and Dr. Walter Taylor.

Northam Warren Corp. All are past presidents of the Society.

Abstracts of the technical papers presented follow.

#### "STUDIES ON ENZYMES IN THE SKIN: THEIR VALUE AS A RESEARCH TOOL"

Since enzymes are regulators of basic metabolic reactions occurring within cells, interference with their action may be expected to affect profoundly the function of cells and even the entire body. Some disease processes are due entirely to genetic absence of specific enzymes, e.g., mental deficiency associated with absence of the enzyme which metabolizes phenylpyruvic acid. The latter accumulates and affects the central nervous system. In other instances, chemicals, such as lewisite, may bring about blistering by inhibition of the function of specific enzymes governing sugar metabolism in the skin. Enzymes may be extracted, purified, and their activity thoroughly defined; some may be used as therapeutic agents: trypsin for debridement of wounds, pancreatin to improve digestion and increase absorption of fats.

Enzymes are commonly named according to their function: esterases hydrolyze esters. Some enzymes are quite specific: only one ester will be split; others may attack several types of esters. In assay of tissues for maximum enzyme activity a number of factors must be adjusted



Dr. A. T. Frascati and Fred Perrone agree that the outlook for the cosmetic industry is definitely encouraging



Maison G. deNavarre relates an interesting anecdate of the S.C.C. tour to Europe to Mrs. John Quigg to the amusement of President-elect and Mrs. Savery F. Coneybear and Mrs. deNavarre



Lester Conrad, Michael Stanton and Mitchell Muller stand back of Mrs. Conrad, Mrs. Stanton and Mrs. Muller at the cocktail party before the banquet



Harry Isacoff, skilled historian, queries Walter Wynne, chairman of the committee on arrangements about some photographs taken during the S.C.C. tour abroad last Summer





Among the notables present were Ernest Durrer, Robert E. Horsey, Robert
Williams, Dr. Henry J. Wing, Mrs. Horsey, Mrs. Durrer and Mrs. Williams
Malmstrom, Mrs. Colbert, Mrs. Nielsen and Mrs. Allen Newcomb



Dr. Everett Saul discusses the impact of the S.C.C. medal on the cosmetic industry with Dr. G. R. Clark, medalist speaker and Harold Goulden, T.G.A. Scientific Section director



Michael Stanten, founder of the New York chapter of the S.C.C. listens attentively while Mrs. Stanton points out features in the afternoon program to Charles Dwyer

to optimum conditions: pH, temperature, concentration of substrate (the substance acted upon), cofactors (or activating substances), inhibitors minimized, tissue preparation with minimum destruction of enzyme, and control of various biological in vivo factors (diet, age, sex, litter mates, homonal balance). Enzymes are catalysts; they act only on reactions that would procede independently; they accelerate these reactions presumably by lowering the energy requirements for the reaction (activation energy). The basic structure of an enzyme is a large protein molecule; additional groups may be essential for enzyme activity.

Many enzymes have been identified and isolated from the skin. Probably all cells have nearly the same kinds of enzymes, but in different amounts or states of activity. Enzymes of the skin are difficult to study because of low activity and resistance of collagen to grinding. Enzymes of the skin receiving most attention are those governing carbohydrate, protein and pigment metabolism.

I have worked chiefly with carbohydrate enzymes and have shown a correlation between the activity of these enzymes within the epidermal cell and the thickening of the living epidermis during the growth phase of the hair cycle in rats. The fact that a correlation could be made between change in enzyme activity and change in structure of epidermis suggests that similar studies may shed some light on how detergents and other chemicals may effect the skin. It is known that detergents thicken the living epidermis; it would be interesting to know what happens to the activity of the enzymes of the skin during this process. It is possible that the more irritating a detergent is the greater will be the alteration in enzyme activity. A sample laboratory enzyme screening test might be developed to measure the capacity of new detergents for skin irritation. Expensive, time-consuming field trials could be avoided. There is no reason why the ingredients of cosmetics could not be evaluated in the same way.—Abstract of SCC paper by Robert D. Griesemer.

#### "SOME ASPECTS OF CHELATION IN COSMETIC PRODUCTS"

The paper proposes to elucidate some aspects of chelation chemistry for the cosmetic chemist, to show a method of saving time in laboratory screening, and to indicate some uses of chelating agents in old and new products.

The chemistry of some of the newer chelating agents, including Diethylene-triaminepentaacetic Acid, DTPA, will be discussed.

Formation constants expressed as log K values aid in selecting the proper chelating agent. The effect of pH must also be considered. The role of competing ions, as well as di and trivalent ions, is also discussed.

In any aqueous system, the chelating agent should always be the first ingredient added. It has often been found advantageous to use the free acid which can then be neutralized with any desired base.

Application of chelating agents to a number of problems in shampoos, detergent bars, and soaps, hair dyes, oxidation and bleaching, and stearic acid creams, is discussed.—Abstract of SCC paper by Andrew J. Gard.

#### "THE ROLE OF SURVEY RESEARCH IN NEW PRODUCT DEVELOPMENT"

1. Research is not a substitute for creativity or inventiveness. Survey research can guide invention by reporting accurately the status quo and predicting the public's reaction to new products when, as, and if they come on the market.

a. It is not sufficient to give the public "what it wants" though much research has been devoted to finding out what the public wants as if the sole basis for new product development was giving the public "what is wants." The public can only want what it is familiar with. This the public already has—such products are already on the market. Following this lead, leads only to mediocrity.

b. We must give the public more than it wants. Yet not something so advanced that it is impossible to educate the public to want it.



Ivar Malmstrom, Allen Newcomb, Irving Colbert and Richard Malmstrom who were active at the meeting pause for a moment before luncheon



Beverly Meigs, former secretary of the New York Chapter of the S.C.C. chats with Dr. John R. Brown Jr., director and vice president in charge of research and development for the Colgate-Palmolive Co.



Ross Whitman, skilled chemist and wit, observes the effect of one of his timely anecdotes on Miss Betty Pamuk and George Kackajian



Constantin Zannis and Mr. and Mrs. J. G. Kakehashi discuss interesting experiences they had on the S.C.C. airplane tour to Europe last Summer



Director Sophie Plechner of the S.C.C. is highly amused when T.G.A. Scientific Director Harold Goulden points out some of the problems likely to confront her



An interested group at the cocktail party: Mr. and Mrs. Walter Frederick, Mr. and Mrs. Maurice Rosenthal, Mr. and Mrs. Milton Slade and Dr. Otto Jacobi



William R. Glese, Academy of Sciences, and Mrs. Coneybear congratulate the new chairman-elect Savery F. Coneybear who has served the S.C.C. well in various capacities



Good humor prevailed when Pierre Bouillette, president of the American Society of Perfumers and Mrs. Bouillette paused to exchange greetings with Kenneth Walker



George G. Kolar, former president of the S.C.C. pauses to chat with Dr. Kenneth Russell, also former president of the S.C.C. and Mrs. Russell



Three chairmen and their wives: Herman J. Amsterdam, chairman of the Special Award; Christian F. Wight, chairman of the American Society of Perfumers; and Harry Isacoff, chairman of the New York Chapter of the S.C.C. and chairman of the S.C.C. Library committee



Dr. Oliver Marton, secretary of the American Society of Perfumers, Theodore Ostrowski, chairman-elect of the New York Chapter of the S.C.C., Albert Dillinger, former president of the American Society of Perfumers and Harry Isacoff, chairman of the New York Chapter of the S.C.C. are much interested in a passing fancy



Robert A. Kramer, secretary of the S.C.C., Mrs. Kramer and Dr. Sol Gershon, former president of the S.C.C. and Mrs. Gershon enjoying the fastivitles at the cocktail party



Ray Reed, one of the most faithful members of the S.C.C. who journeys from the midwest to attend all meetings, Mrs. Reed, Horace Secrist and William Mueller pause for chat

p to up 4 in a v cll lo st li a lo



Dr. and Mrs. John Hein, Lester Apperson and Miss Audrey Edwards snapped just before the banquet



J. George Fiedler, Dr. Julius Wetterhahn, Dr. Yolande Valer and Jean R. L. Martin before luncheon

2. All survey research must be preceded by a study of previous research and a preliminary unstructured interview with customers to find the state of their thinking. In this pre-research we are frankly hunch-hunting. Here is where the research person tries to be creative and this is the sense in which research is creative. The survey research method of interviewing many people serves as a sort of mutation of ideas. The right combination of old ideas often represents the most ingenious invention. 3. Formally, survey research serves to adjust the new product to the public's acceptance. It does not invent the new product but tries to see how the new product stacks up in the customer's mind with what he is already familiar with and what sales devices will be needed to bring out the superior quality, if any, of the new product. This is usually the process of blind testing and experimental design.

4. But we know the public is quite insensitive to many improvements in products unless they are very dramatic and wide departures from the public's past experience. What sells a product is not only what it is intrinsically—chemically and physically—but also what it is psychologically. Every product must play a role on the market stage. If this is an appealing role the product will sell. If it is not the product won't. Thus, it is not the physical and chemical ingredients of a product but the psychological ingredients imputed by the customers that explain the products demand.—Abstract of SCC paper by J. Stevens Stock.



Informal gatherings which afforded members the opportunity to renew old friendships and to make new ones were a feature of the meeting, especially at the cocktail party, luncheon and banquet. One such group snapped at the cocktail party was made up of Mr. and Mrs. Henry Maso and Mr. and Mrs. Bruce Thorsberg

#### "THE LIPID ASSAY OF THE SKIN"

Sections of skin excised from 10 children ranging in age from 19 months to 11 years and 18 adults ranging in age from 29 years to 54 years were assayed for the lipid composition. Assays determined the concentration of total lipids, total cholesterol, total phospholipids, total fatty acids, and the polyunsaturated fatty acids. It was ascertained that the results for all but the polyunsaturated fatty acids were in general conformity to the published findings of other investigators in the field. For the polyunsaturated fatty acids it was determined that in normal skin the levels of the dienoic, trienoic, tetraenoic and pentaenoic acids did not vary appreciably for either age group. The hexaenoic acids however were determined to be higher in the children's group.—Abstract of SCC paper by Howard E. Worne.

### "FACTORS TO BE CONSIDERED IN THE PRESERVATION OF COSMETIC EMULSIONS"

Cosmetic emulsions are usually of such a composition that they support the growth of various microorganisms. The organisms growing in or on such products may be bacteria, yeasts, or molds, with molds the most common source of trouble. The composition of a product-including such factors as the presence or absence of nutrients, the pH, the presence of chemicals having inherent toxicity, and the presence or absence of a suitable preservative—determines the likelihood of such growth. Other factors such as the conditions of storage and exposure and the type and strain of contaminating organisms exert a marked influence. Some of the newer cosmetic materials by reason of their chemical nature can be altered in composition by enzymes released by microorganisms during their process of growth. These enzymes can split certain ester-type surfactant molecules, disassociating the lipophilic and hydrophilic portions, eliminating the surfactant properties, and destroying emulsion stability. Such changes may be even more evident than the growth of microorganisms themselves. As a further complication, certain time-honored preservatives have been found by various workers to complex with these non-ionic surfactants diminishing their effective concentration below a critical level.

The comparative results obtained by several laboratories in testing the effectiveness of preservatives in the presence of these non-ionic surfactants are not always in apparent agreement. The differences in the results obtained can be explained by the differences in experimental procedure.

The authors will explain some of the experimental



A popular group was made up of John A. Faber, Henry Eickmeyer, Miss Dorothy Kaske, Gert Keller, vice president of the Essential Oil Association and B. G. Wirsing



Two former presidents Dr. Sol Gershon and Maison G. deNavarre engage in an animated conversation while Allan L. Ritch reflects on the discussion



James H. Baker, president for 1958 enjoys the quips of editor Edward Sagarin, Richard Sommers and Gabriel Barnett, efficient chairman for three years of the Cosmetic Seminar



Dr. Herbert Sommers, Robert Mendosa and energetic I. R. Hollenberg pause for a few minutes of relaxation after the morning session

data they have obtained and some practical points to be considered in the preservation of such cosmetic products.—Abstract of SCC paper by L. F. Tice and M. Barr.

#### "EVALUATING LIQUID LANOLIN— A CASE STUDY"

This paper points out the fact that, today, our scientists and chemists have the ability to develop a wide range of new dermatological ingredients by synthesis and by modification or fractionization of existing materials. Starting with a set of specifications products can be developed which, in theory, will meet the end needs. However, while it is relatively easy to determine the purity and safety of these products, techniques for the true objective demonstration of their functional efficiency are sadly lacking.

As to purity and safety, the Williams bill, now pending in Congress is mentioned. This bill will require manufacturers of cosmetic raw materials to show proof of their safety and may require our going beyond the tests we now make.

As to the functional efficiency of dermatological products, the Federal Trade Commission and the Food and Drug Administration are taking increasingly closer looks at advertising and label claims. It is in this area of proving the efficiency of cosmetic products that our greatest problem lies.

Using the case study type of presentation, this paper then traces the history of the conception and development of a new dermatological ingredient, outlines the means used to demonstrate its purity and safety, and discusses the broad research approach used in an attempt to determine its functional efficiency.

No really dramatic research discoveries are involved. Rather, by showing examples of panel testing procedures, laboratory and clinical experiments and physiochemical studies, the objective is to stimulate further research in this broad area of dermatology where too little is known.—Abstract of SCC paper by E. Allen Newcomb.

#### "AEROSOL EMULSION SYSTEMS"

The spraying of aqueous-based products as aerosols has been difficult to achieve as a result of the incompatibility of water with the "Freon" propellents. The various systems that have been investigated in attempts to overcome this problem are presented. These systems include oil-in-water emulsions, water-in-oil emulsions, three-phase systems, and propellent-water systems containing a mutual solvent.

The water-in-oil systems are considered in detail. Aerosols with spray characteristics varying from relatively fine to very coarse may be obtained with these systems. Factors influencing the spray characteristics include the type of propellent used, the propellent-water ratio, the presence of auxiliary solvents, the type of valve, etc.

Besides spray characteristics, other properties of importance in aerosol formulations are also discussed. These properties include emulsion stability, storage stability, flammability, and pressure.—Abstract of SCC paper by Paul A. Sanders.

This laboratory of Fritzsche Brothers, Inc. is devoted to the evaluation and control of basic raw materials



# The

# Perfumery Aromatics Industry in the United States



A 100-gallon development-scale reacter at The Dow Chemical Co.



Electronically controlled Vapor Fractometer, Fritzsche Brothers, Inc.



By PAUL Z. BEDOUKIAN, Ph.D.

Consulting Chemist, Author of
"PERFUMERY SYNTHETICS AND ISOLATES"

## PRESENT STATUS OF THE AMERICAN AROMATICS INDUSTRY

In order to convey an idea of the present status of the perfumery aromatics industry in America, the following information taken from the United States Tariff Commission. Synthetic Organic Chemicals, Production and Sales, 1956, is given below. According to this report, the total quantity of flavor and perfume materials produced in 1956 amounted to 44,700,000 pounds. The sales were 39,200,000 pounds, valued at 54,700,000 dollars. Listed here are all synthetic organic flavor and perfume materials for which any reported data on production or sales have been published.



Bench-scale lab research equipment at The Dow Chemical Co.

Makanda?	Produc-	Sales			
Material		Quantity	Value	Unit value1	
Grand total	1,000 pounds 44,658	1,000 pounds 39,169	1,000 dollars 54,674	Per pound \$1.40	
FLAVOR AND PERFUME MATERIALS, CYCLIC					
Total	25,391	20,723	32,865	1.59	
Materials for which separate statistics may not be shown	10,378 15,013	8,220 12,503	15,454 17,411	1.88	
Benzenoid and Naphthalenoid					
Total	15,509	12,860	16,424	1.28	
Amylcinnamaldehyde- Anethole- Benzophenone- Benzyl acetate- Benzyl alcohol²- Benzyl penzoate²- Benzyl propionate- Ethyl a,β-epoxy-β-methylhydrocinnamate- Eugenol- Isobutyl phenylacetate- Isobutyl phenylacetate- Isoeugenol- p-Methoxyacetophenone- Methyl salicylate (Synthetic wintergreen oil)- Phenethyl acetate- Phenethyl alcohol- 3-Phenyl-l-propyl alcohol (Hydrocinnamic alcohol)- All other benzenoid and naphthalenoid materials-	330 1,398 114 715 673 157 8 7 135 25 73 6 6 3,518 60 1,315 13 6,962	213 1,141 119 693 685 150 6  135  68 7 3,283 24 960 11 5,365	360 1,272 133 365 322 80 8  280  241 12 1,664 30 1,015 22 10,620	1.69 1.11 1.12 .53 1.33 2.07  3.54 1.71 .51 1.25 1.06 2.00	
Terpenoid, Heterocyclic, and Alicyclic					
Total	9,882	7,863	16,441	2.09	
Cedryl acetate- citral (Geranial)- citronellal- citronellyl acetate- citronellyl formate- Coumarin- Ethyl oxyhydrate- Geranyl acetate- Geranyl acetate- Geranyl formate- Hydroxycitronellal-	55 100 224 246 7 13 780 32 381 45 11 200	40 70  183 6 11 660 25 279 35	80 300  684 25 56 2,000 23 951 125 	2.00 4.29 3.74 4.17 5.09 3.03 .92 3.41 3.57	
Ionones, total	271	238	927	\$3.89	
a-Ionone	31 240 338	230	62 865	7.75	
Linalool Linalyl acetate Menthol, synthetic Methylionones Piperonal (Heliotropin) Rhodinol Safrole Terpineols Terpinyl acetate Terpinyl propionate Vetivenyl acetate All other terpenoid, heterocyclic, and alicyclic materials  ETHYOD AND DEDERING MATERIALS ACCORDS	58 110 382 249 281 11 194 2,136 315 12 15 3,416	54 100 292 226 334 11 39 1,927 315	270 465 1,579 1,283 706 274 39 532 155  210 4,834	5.00 4.65 5.41 5.68 2.11 24.91 1.00 .28 .49 49	
FLAVOR AND PERFUME MATERIALS, ACYCLIC					
Total	19,267	18,446	21,809	1.18	
Materials for which separate statistics may not be shown	1,254	962 17,484	902 20,907	1.20	
Allyl caproate	5 156 17,821 27 4	6 154 17,294 30	16 106 20,761 24	2.67 .69 1.20 .80	

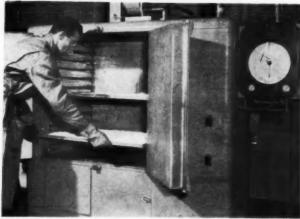
<sup>&</sup>lt;sup>1</sup> Calculated on rounded figures.
<sup>2</sup> Includes some technical and medicinal grades.
<sup>3</sup> Includes chemically modified essential oils.

#### CONCERNING THE TABLES

Flavor and perfume materials for which United States production or sales were reported in 1956 are identified by number of manufacturer. The materials marked with an asterisk appear in the previous table along with the quantities produced and prices. All others are materials reported without prices and quantities produced.



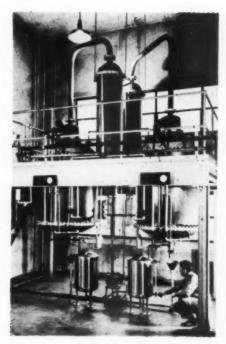
Organoleptic testing of raw materials in the Control Laboratory of Fritzsche Brothers, Inc.



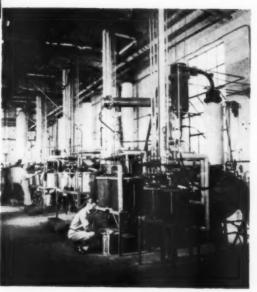
Development-scale drying oven at The Dow Chemical Co.



Aromatics plant central control board at The Dow Chemical Co.



A Steam Distillation Unit in the Clifton plant of Fritzsche Brothers, Inc.



A battery of vacuum stills in the Clifton plant of Fritzsche Brothers, Inc.

Acetophenone	, 337,						
2-Acetonaphthone (Methyl β-naphthyl ketone)  Acetophenone	, 353,						
Acetophenone——————————————————————————————————	, 353,						
Acetophenone——————————————————————————————————	, 353,	402.					
7-Acetyl-6-ethyl-1,1,4,4-tetramethyl-1,2,3,4- tetrahydronaphthalene.  2a-Amylcinnamaldehyde, dimethyl acetal.  2a-Amylcinnamyl alcohol	, 337,						
Ca-Amylcinnamaldehyde   332							
x-Amylcinnamaldehyde, dimethyl acetal		252	200	100	1770	600	
### Amyleinnamyl alcohol   353   Anisaldehyde   337   Anisaldehyde   337   Anisyl acetate   279   Anisyl alcohol   337   Anisyl formate   279   Anisyl formate   358   Anisyl formate   359   Benzyl acetate   369   Benzyl alcohol   266   Benzyl butyrate   279   Benzyl butyrate   279   Benzyl ther   337   Benzyl isoamyl ether   337   Benzyl isoamyl ether   337   Benzyl isoamyl ether   337   Benzyl isoamyl ether   379   Benzyl alicylate   379   Benzyl alicylate   379   Benzyl valerate   379   A-Bromostyrene   379   A-Bromostyrene   379   A-Bromostyrene   379   A-Bromostyrene   379   A-Tetr-Butyl-4,6-dinitrohemimellitene   379   Carvacrol (Isopropyl-o-cresol)   370   Carvacrol (Isopropyl-o-cresol)   370   Cannamyl acetate   379   Cinnamyl alcohol   379   Cinnamyl alcohol   379   Cinnamyl alcohol   379   Cinnamyl isoamate   379   Cinnamyl isoamate   379   Cinnamyl isoamate   379   Cinnamyl rormate   379   Cinnamyl		303,	398,	402,	4/2,	600.	
Anisaldehyde	398.						
Anisaldehyde   337 Anisole (Methyl phenyl ether)   337 Anisyl acetate   279 Anisyl alcohol   377 Anisyl formate   377 Anisyl formate   377 Anisyl propionate   379 Benzyl propionate   379 Benzyl acetate   379 Benzyl alcohol   370 Benzyl benzoate   370 Benzyl benzoate   370 Benzyl cinnamate   370 Benzyl ther   370 Benzyl isoamyl ether   370 Benzyl isoamyl ether   370 Benzyl isoamyl ether   370 Benzyl isoawyl ether   370 Benzyl isoawyl ether   370 Benzyl isoawyl ether   370 Benzyl isoawyl ether   370 Benzyl propionate   370 Benzyl propionate   370 Benzyl propionate   370 Benzyl valerate   370 Benzyl valerate   370 Benzyl valerate   370 A-Bromostyene   370 A-tert-Butyl-2,6-dimethyl-3,5-dinitroacetophenone   370 (Mask ketone)   370 C-tert-Butyl-3-methyl-2,4-dinitroanisole (Musk ambrette)   370 Carvacrol (Isopropyl-o-cresol)   370 Carvacrol (Isopropyl-o-cresol)   370 Cannamyl alcohol   370 Cannamyl alcohol   370 Cannamyl alcohol   370 Cannamyl isobutyrate   370 Cannamyl isopatyrate   370 Cannamyl isopatyrate   370 Cannamyl isopatyrate   370 Cannamyl isopatyrate   370 Cannamyl rormate   370 C	, 212,		369,	х.			
Anisyl alcohol	, 353,	365.					
Anisyl formate- Anisyl propionate- Anisyl propionate- Benzophenone- Benzyl actate- Benzyl actate- Benzyl butyrate- Benzyl butyrate- Benzyl cinnamate- Benzyl cinnamate- Benzyl isoamyl ether- Benzyl isoamyl ether- Benzyl isoutyrate- Benzyl isoutyrate- Benzyl isoutyrate- Benzyl isovalerate- Benzyl isovalerate- Benzyl propionate- Benzyl propionate-  Benzyl isovalerate- Benzyl isovalerate- Benzyl isoutyrate- Benzyl isovalerate- Benzyl isovalerate- Benzyl isovalerate- Benzyl isovalerate- Benzyl propionate-  Benzyl valerate-  4-tert-Butyl-2,6-dimethyl-3,5-dinitroacetophenone (Misk ketone)- 5-tert-Butyl-2,6-dinitrohemimellitene- 6-tert-Butyl-3-methyl-2,4-dinitroanisole (Misk ambrethe)- 5-tert-Butyl-2,4,6-trinitro-m-xylene (Misk xylol)- Carvacrol (Isopropyl-o-cresol)- Cinnamyl actate- Cinnamyl actate- Cinnamyl actate- Cinnamyl actate- Cinnamyl actane- Cinnamyl actane- Cinnamyl actane- Cinnamyl isobutyrate- Cinnamyl isobutyrate- Cinnamyl propionate-		252	100				
Anisyl promate- Anisyl propionate- 353  #Benzyl acetate- 337  #Benzyl actohol- #Benzyl benzoate- Benzyl benzoate-  #Benzyl cinnamate-  #Benzyl cinnamate-  #Benzyl cinnamate-  #Benzyl formate-  #Benzyl formate-  #Benzyl isoamyl ether-  #Benzyl isoamyl ether-  #Benzyl isovalerate-  #Benzyl isovalerate-  #Benzyl isovalerate-  #Benzyl isovalerate-  #Benzyl propionate-  #Benzyl propionate-  #Benzyl propionate-  #Benzyl salicylate-  #Benzyl propionate-  #Benzyl propionate-  #Benzyl isovalerate-  #Benzyl isovalerate-	337,						
Anisyl propionate   353	337,						
Benzyl acetate   326   Benzyl benzoate   226   Benzyl butyrate   279   Benzyl cinnamate   279   Benzyl formate   271   Benzyl isobutyrate   337   Benzyl isovalerate   279   Benzyl isovalerate   279   Benzyl isovalerate   279   Benzyl propionate   271   Benzyl propionate   279   Benzyl propionate   279   Benzyl valerate   279   Benzyl valerate   279   Benzyl valerate   279   Benzyl valerate   337   Benzyl valerate   337   Carbarol (Isopropyl-0-cresol)   337   Carvacrol (Isopropyl-0-cresol)   337   Cinnamal acid   266   Cinnamyl acetate   337   Cinnamyl acetate   337   Cinnamyl acetate   337   Cinnamyl alcohol   337   Cinnamyl isobutyrate   379   Cinnamyl isobutyrate   379   Cinnamyl isobutyrate   379   Cinnamyl roppionate   379   Cinnamyl roppionate   379   Cinnamyl roppionate   379   Cinnamyl roppionate   379   Cinnamyl valerate	402.						
### Benzyl alcohol——————————————————————————————————	, 337,						
Benzyl butyrate	353,						
Benzyl cinnamate   279	303,						
Benzyl cinnamate   279	337,						
Benzyl formate-         337           Benzyl isoamyl ether-         337           Benzyl isobutyrate-         279           Benzyl isovalerate-         279           Benzyl isovalerate-         279           Benzyl phenylacetate (Benzyl α-toluate)-         271           Benzyl propionate-         279           Benzyl valerate-         337           Benzyl valerate-         353           4-tert-Butyl-2,6-dimethyl-3,5-dinitroacetophenone         (Misk ketone).           5-tert-Butyl-3,6-dinitrohemimellitene-         337           6-tert-Butyl-3,-dinitromisole (Musk ambrette).         337           5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)-         337           Cinnamaldehyde-         337           Cinnamyl acetate-         337           Cinnamyl acetate-         337           Cinnamyl acetate-         337           Cinnamyl cinnamate-         337           Cinnamyl formate-         337           Cinnamyl ropionate-         337	337,	353,	365,	391,	398,	402.	
Benzyl isoamyl ether	402.						
Benzyl isobutyrate   279	279,		353,	402.			
Benzyl isoeugenyl ether	353,		402.				
Benzyl isovalerate   279	353,		1020				
Benzyl phenylacetate (Benzyl α-toluate)   271	337,		402.				
Benzyl valerate	337,				100		
Benzyl valerate	332,		353,	402,	409.		
α-Bromostyrene       353         4-tert-Butyl-2,6-dimethyl-3,5-dinitroacetophenone       337         (Musk ketone)       337         5-tert-Butyl-4,6-dinitrohemimellitene       337         6-tert-Butyl-3-methyl-2,4-dinitroanisole (Musk ambrette)       337         5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)       337         Carvacrol (Isopropyl-o-cresol)       337         Cinnamaldehyde       266         Cinnamyl acetate       337         Cinnamyl acetate       279         Cinnamyl anthranilate       279         Cinnamyl formate       337         Cinnamyl formate       337         Cinnamyl isobutyrate       353         Cinnamyl formate       379         Cinnamyl sovalerate       279         Cinnamyl ropionate       337         Cinnamyl valerate       337         Cinnamyl valerate       337         Cinnamyl valerate       337         Cinnamyl valerate       337         Cinnamyl propionate       337         A. α-Dimethylbenzyl alcohol (p-Methylphenylmethyl-carbinol)       337         a, α-Dimethylphenethyl acetate       34         a, α-Dimethylphenethyl achol       398         a, α-Dimethylphenethyl achol       <	353.						
4-tert-Butyl-2,6-dimethyl-3,5-dinitroacetophenone (Musk ketone).   5-tert-Butyl-4,6-dinitrohemimellitene		4161					
(Misk ketone). 5-tert-Butyl-4,6-dinitrohemimellitene—6-tert-Butyl-3-methyl-2,4-dinitroanisole (Misk ambrette). 5-tert-Butyl-3-methyl-2,4-dinitroanisole (Misk xylol)—337 Carvacrol (Isopropyl-o-cresol)—337 Cinnamaldehyde—337 Cinnamyl acedate—337 Cinnamyl acetate—337 Cinnamyl alcohol—337 Cinnamyl anthranilate—279 Cinnamyl butyrate—279 Cinnamyl cinnamate—337 Cinnamyl isobutyrate—337 Cinnamyl isobutyrate—337 Cinnamyl isobutyrate—337 Cinnamyl propionate—337 Cinnamyl propionate—337 Cinnamyl propionate—337 Cinnamyl valerate—337 C	474.						
6-tert-Butyl-3-methyl-2,4-dinitroanisole (Mask ambrette). 5-tert-Butyl-2,4,6-trinitro-m-xylene (Mask xylol) Carvacrol (Isopropyl-o-cresol)							
ambrette). 5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)							
5-tert-Butyl-2,4,6-trinitro-m-xylene (Misk xylol)—  Carvacrol (Isopropyl-o-cresol)————————————————————————————————————	474.						
Carvacrol (Isopropyl-o-cresol)       337         Cinnamaldehyde       266         Cinnamyl acetate       266         Cinnamyl alcohol       337         Cinnamyl alcohol       279         Cinnamyl butyrate       279         Cinnamyl cinnamate       337         Cinnamyl formate       337         Cinnamyl isobutyrate       279         Cinnamyl sovalerate       279         Cinnamyl propionate       337         Cinnamyl valerate       337         Cumaldehyde (p-Isopropylbenzaldehyde)       213         p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)       337         a, α-Dimethylphenethyl acetate       398         a, α-Dimethylphenethyl alcohol       398         a, α-Dimethyl-3-phenylpropanol       398         a, α-Dimethyl-3-phenylpropanol       398         a, β-Dinitro-1, 1, 3, 3, 5-pentamethylindan       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anisate       337         Ethyl benzoate       337         Ethyl cinnamate       337         Ethyl cinnamate       337	474.						
Cinnamic acid       266         Cinnamyl acetate       337         Cinnamyl alcohol       36         Cinnamyl anthranilate       279         Cinnamyl butyrate       279         Cinnamyl cinnamate       337         Cinnamyl formate       353         Cinnamyl isovalerate       279         Cinnamyl propionate       337         Cinnamyl valerate       337         Cinnamyl valerate       213         Cinnamyl valerate       337         Cinnamyl isovalerate       229         Cinnamyl propionate       337         Cinnamyl valerate       337         Cinnamyl valerate       337         Cinnamyl valerate       337         a, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)       337         a, α-Dimethylphenethyl acetate       38         a, α-Dimethylphenethyl alcohol       398         a, α-Dimethyl-3-phenylpropanol       398         4,6-Dinitro-1,1,3,3,5-pentamethylindan       353         Diphenylmethane       353         1,3-Diphenyl-2-propanone (Dibenzyl ketone)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anthranilate       337         Ethyl benz							
Cinnamyl acetate-       337         Cinnamyl alcohol-       337         Cinnamyl anthranilate-       279         Cinnamyl butyrate-       279         Cinnamyl formate-       337         Cinnamyl isobutyrate-       353         Cinnamyl isobutyrate-       353         Cinnamyl propionate-       279         Cinnamyl propionate-       337         Cimaldehyde (p-Isopropylbenzaldehyde)-       213         Cimaldehyde (p-Isopropylbenzaldehyde)-       213         carbinol).       337         a, α-Dimethylphenethyl acetate-       398         a, α-Dimethylphenethyl alcohol       398         a, α-Dimethyl-3-phenylpropanol       398         4,6-Dinitro-1,1,3,3,5-pentamethylindan-       353         Diphenylmethane-       353         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)-       337         Ethyl anisate-       337         Ethyl benzoate-       337         Ethyl cinnamate-       337         Ethyl cinnamate-       337	353.						
Cinnamyl alcohol       337         Cinnamyl anthranilate       279         Cinnamyl cinnamate       279         Cinnamyl cinnamate       337         Cinnamyl formate       353         Cinnamyl isobutyrate       279         Cinnamyl propionate       36         Cinnamyl valerate       337         Cumaldehyde (p-Isopropylbenzaldehyde)       213         p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)       337         a, α-Dimethylphenethyl acetate       398         a, α-Dimethyl-3-phenylpropanol       398         4, 6-Dinitro-1, 1, 3, 3, 5-pentamethylindan       353         1,3-Diphenyl-2-propanone (Dibenzyl ketone)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anisate       337         Ethyl anthranilate       337         Ethyl cinnamate       337         Ethyl cinnamate       337	353.	402	409				
Cinnamyl anthranilate       279         Cinnamyl butyrate       279         Cinnamyl cinnamate       337         Cinnamyl formate       353         Cinnamyl isobutyrate       279         Cinnamyl isovalerate       279         Cinnamyl propionate       337         Cinnamyl valerate       337         Cumaldehyde (p-Isopropylbenzaldehyde)       213         p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)       337         α, α-Dimethylphenethyl acetate       398         α, α-Dimethyl-3-phenylpropanol       398         4,6-Dinitro-1,1,3,3,5-pentamethylindan       337         1,3-Diphenyl-2-propanone (Dibenzyl ketone)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anisate       337         Ethyl anthranilate       218         Ethyl cinnamate       337         Ethyl cinnamate       337	353,		407.				
Cinnamyl butyrate       279         Cinnamyl cinnamate       337         Cinnamyl isobutyrate       353         Cinnamyl isovalerate       279         Cinnamyl propionate       337         Cinnamyl valerate       327         Cumaldehyde (p-Isopropylbenzaldehyde)       213         p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)       337         α, α-Dimethylphenethyl acetate       398         α, α-Dimethyl-3-phenylpropanol       398         4,6-Dinitro-1,1,3,3,5-pentamethylindan       353         Diphenylmethane       353         1,3-Diphenyl-2-propanone (Dibenzyl ketone)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anisate       337         Ethyl benzoate       337         Ethyl cinnamate       337         Ethyl cinnamate       337         Ethyl cinnamate       337	402,						
Cinnamyl formate       337         Cinnamyl isobutyrate       353         Cinnamyl propionate       279         Cinnamyl valerate       337         Cumaldehyde (p-Isopropylbenzaldehyde)       213         p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)       337         x,α-Dimethylphenethyl acetate       398         a,α-Dimethylphenethyl alcohol       398         a,α-Dimethylphenethyl alcohol       398         a,α-Dimethyl-3-phenylpropanol       337         4,6-Dinitro-1,1,3,3,5-pentamethylindan       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anisate       337         Ethyl anthranilate       218         Ethyl cinnamate       337         Ethyl cinnamate       337	337,						
Cinnamyl isobutyrate       353         Cinnamyl isovalerate       279         Cinnamyl propionate       337         Cinnamyl valerate       337         Cumaldehyde (p-Isopropylbenzaldehyde)       213         p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)       337         a, α-Dimethylphenethyl acetate       398         a, α-Dimethyl-3-phenylpropanol       398         4, 6-Dinitro-1, 1, 3, 3, 5-pentamethylindan       353         1,3-Diphenyl-2-propanone (Dibenzyl ketone)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anisate       337         Ethyl benzoate       337         Ethyl cinnamate       337         Ethyl cinnamate       337	353.	100					
Cinnamyl isovalerate-       279         Cinnamyl propionate-       337         Cinnamyl valerate-       337         Cumaldehyde (p-Isopropylbenzaldehyde)-       213         p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol).       337         a, α-Dimethylphenethyl acetate-       398         a, α-Dimethyl-3-phenylpropanol-       398         a, α-Dimethyl-3-phenylpropanol-       353         Diphenylmethane-       353         1,3-Diphenyl-2-propanone (Dibenzyl ketone)-       337         22-Ethoxynaphthalene (Ethyl β-naphthyl ether)-       337         Ethyl anisate-       337         Ethyl benzoate-       337         Ethyl cinnamate-       337         Cinnamyl propionate-       337         Ethyl cinnamate-       337	353,						
337   Cinnamyl propionate	353,						
337   Cumaldehyde (p-Isopropylbenzaldehyde)   213,     p, α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)   337,     α, α-Dimethylphenethyl acetate   398,     α, α-Dimethylphenethyl alcohol   398,     α, α-Dimethylphenethylphenethylphenethyl alcohol   398,     α, α-Dimethylphenethyl alcohol   398,     α, α-Dimet	353,		409.				
p, α-Dimethylbenzyl alcohol (p-Methylphenylmethyl- carbinol).  α,α-Dimethylphenethyl acetate	402,						
carbinol).       398.         x, α-Dimethylphenethyl alcohol       398.         a, α-Dimethylphenethyl alcohol       398.         a, α-Dimethyl-3-phenylpropanol       398.         4,6-Dinitro-1,1,3,3,5-pentamethylindan       337.         Diphenylmethane       353.         1,3-Diphenyl-2-propanone (Dibenzyl ketone)       337.         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337.         Ethyl anisate       218.         Ethyl anthranilate       337.         Ethyl benzoate       337.         Ethyl cinnamate       337.         Ethyl cinnamate       337.	337.						
398.   398.							
A, α-Dimethylphenethyl alcohol							
a, α-Dimethyl-3-phenylpropanol       398         4,6-Dinitro-1,1,3,3,5-pentamethylindan       337         Diphenylmethane       353         1,3-Diphenyl-2-propanone (Dibenzyl ketone)       337         2-Ethoxynaphthalene (Ethyl β-naphthyl ether)       337         Ethyl anisate       218         Ethyl anthranilate       337         Ethyl benzoate       337         Ethyl cinnamate       337         Ethyl cinnamate       337							
337.   34.   34.   34.   35							
1,3-Diphenyl-2-propanone (Dibenzyl ketone)							
2-Ethoxynaphthalene (Ethyl β-naphthyl ether)							
Ethyl anisate       337,         Ethyl anthranilate       218,         Ethyl benzoate       337,         Ethyl cinnamate       337,	353.						
Ethyl anthranilate	365,	402.					
Ethyl benzoate	402.						
Ethyl cinnamate 337, Ethyl α,β-epoxy-β-methylhydrocinnamate (Ethyl 213.	353,						
tinyi a,p-epoxy-p-methyinydrocinnamate (tinyi   213.	353,		100	100			
	337,	303,	402,	412.			
methylphenylglycidate). 2-Ethylhexyl salicylate							
Ethyl p-methoxycinnamate 337.							
Sthyl methyltolylglycidate 402.							
Ethyl B-phenylglycidate 213,			402,	472.			
Ethyl salicylate 252,	353,						
Sthylvanillin	353, 353,	365.			409	423, 474, 600	).

#### FLAVOR AND PERFUME MATERIALS, CYCLIC -- Continued

#### Terpenoid, Heterocyclic, and Alicyclic -- Continued

```
Cineole (Eucalyptol)-----
                                  482, 599.
                                  271, 337, 353, 402, 409, 423.
332, 337, 353, 398, 402.
332, 337, 353, 398, 402, 409, 474.
*Citral (Geranial)-----
*Citronellal-----
*Citronellol----
*Citronellyl acetate-----
                                  337, 353, 398, 402.
337, 353, 402.
 Citronellyl butyrate-----
*Citronellyl formate-----
                                  337, 353, 398, 402.
 Citronellyl propionate-----
                                  337, 353, 398, 402.
*Coumarin-----
                                  221, 252, 353, 600.
 253, 456.
 216.
                                  216.
 Dihydrocitronellol-----
                                  337.
 3,7-Dimethyl-3-octanol (Tetrahydrolinalool)-----
                                  337, 353, 398.
                                 213, 279, 365, 391, 402, 423, 472. 332, 337, 353, 398, 402, 409, 474. 279, 332, 337, 353, 398, 402, 472, 600. 218, 337, 402.
*Ethyl oxyhydrate-----
*Geraniol----
*Geranyl acetate-----
 Geranyl benzoate-----
 Garanyl butyrate----
                                  279, 337, 353, 402.
*Geranyl formate-----
                                  279, 332, 337, 353, 402, 409, 472, 600.
 Geranyl isovalerate-----
                                  353, 402, 472.
 Geranyl phenylacetate (Geraryl α-toluate)-----
                                  337, 353, 402.
279, 337, 353, 402, 409.
 Geranyl propionate-----
 α-Heptyl-α-butyrolactone-----
 2-Hexyl-2-cyclopenten-1-one-----
                                  398.
Hydrocoumarin (3,4-Dihydrocoumarin)-----
                                  337, 365.
*Hydroxycitronellal-----
                                 332, 337, 353, 600.
337, 353, 402.
Hydroxycitronellal, dimethyl acetal-----
337.
*Tonones:
                                 271, 337, 353, 398.
271, 337, 353, 600.
271, 332, 337, 353, 398, 402, 423, 600.
 #a-Ionone----
 253.
                                 337, 353, 469, X.
Isobornyl propionate-----
 Isobutylquinoline-----
                                 218, 398.
Isopropylquinoline-----
                                 218, 398.
Isopulegol-----
                                 332, 337, 353.
Isosafrole-----
                                 337, 353, 469.
d-Limonene-----
                                 270, 402.
*Linalool----
                                 332, 337, 353, 398, 402, 409, 472, 474. 337, 353, 398, 402, 409, 423, 474, 600.
*Linalyl acetate-----
                                 218, 332, 402.
218, 337, 402.
Linalyl anthranilate-----
Linalyl benzoate-----
Linalyl butyrate-----
                                 337, 353, 402, 409.
Linalyl cinnamate-----
                                 218, 353, 402.
                                 279, 337, 353, 402, 409.
Linalyl formate-----
Linalyl isobutyrate-----
                                 279, 337, 353, 402.
Linalyl isovalerate-----
                                 353, 402.
Linalyl propionate-----
                                 337, 353, 402.
*Menthol, synthetic:
                                 337, 365, 369, 402, 474, X.
 Tech
                                 337, 474, 600.
279, 337, 369, X.
 U.S.P----
Menthone----
Menthyl acetate----
                                 337.
Menthyl anthranilate-----
                                 337, 402.
Menthyl isovalerate----
                                 218. 402.
365.
                                 365.
3-Methylcoumarin-----
6-Methylcoumarin-----
                                 337.
*Methylionones:
                                 271, 337, 398.
 Methyl-x-ionone-----
 Mcthyl-β-ionone-----
 Methylionones (\alpha - \text{ and } \beta -) - \cdots
                                 271, 337, 353, 398.
332.
                                 353, 398, 402.
Neryl acetate-----
                                 353, 402; 409.
Nopyl acetate-----
                                 252, 402.
Phellandrene-----
                                 365.
                                 337, 353, 469, 474.
332, 337, 353, 398, 402, 409, 423, 472, 474.
*Piperonal (Heliotropin)-----
*Rhodinol-----
Rhodinol rose-----
                                 332.
Rhodinyl acetate-----
                                 337, 353, 402, 409.
Rhodinyl formate-----
                                 332, 337, 398, 402.
```

Material	Manufacturers' identification numbers
FLAVOR AND PERFUME MATERIALS, CYCLICContinued	
Terpenoid, Heterocyclic, and AlicyclicContinued	100 001
Saccharin	221, 385.
Saccharin, calcium salt	385.
Saccharin, sodium salt	221, 385.
Santalol	337, 353, 409, 469, 482, 599.   332, 337, 398.
Santalyl acetate	337.
Skatole	218.
*Terpineols:	332, 369, X.
β-Terpineol	369.
Terpineol (α- and β-)	212, 337.
Terpinol hydrate (Terpin hydrate), tech	212.
*Terpinyl acetate	332, 337, 353, 369.
*Terpinyl propionate	332, 337, 353, 472.   353.
Vetivenol	332, 337, 353.
*Vetivenyl acetate	332, 337, 353, 391, 398, 409, 600.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
*Allyl caproate	279, 337, 353, 365, 398, 402, 409, 472.
Allyl enanthate (Allyl heptanoate)	353, 365, 402.
Allyl isothiocyanate (Synthetic mustard oil) Allyl propionate	365, 581.
Allyl sulfide (Diallyl sulfide)	402, 472.
2,3-Butanedione (Biacetyl)	266, 365, 402.
n-Butyl butyrate	279, 353, 402, 472.
Butyl butyryllactate	365.
Butyrone (Di-n-propyl ketone)	353. 337, 353, 402.
Caprylaldehyde (Octyl aldehyde) (Cg)	337, 353, 402.
Decyl acetate	353, 402.
n-Decyl alcohol	337, 353.
Diethyl sebacate (Ethyl sebacate) Diethyl succinate	218, 353, 472 218, 353, 529.
Dimethyloctanol	108, 213.
Dimethyl succinate	365.
Dodecyl acetate (Lauryl acetate)	353, 402.
Enanthaldehyde (n-Heptaldehyde) (C7) *Ethyl butyrate	96, 353, 511.
Ethyl caprate (Ethyl decylate)	91, 353, 402, 409. 353, 402, 409.
Ethyl caproate (Ethyl hexoate)	353, 402, 409.
Ethyl caprylate (Ethyl octoate)	353, 402, 409.
Ethyl enanthate (Ethyl heptylate)Ethyl isobutyrate	353, 402, 472.
Ethyl isovalerate	353, 402.   353, 402, 409.
Ethyl laurate	337, 353, 402, 409.
Ethyl levulinate	218, 337, 398.
Ethyl myristate	402.
Glutamic acid, monopotassium salt	337, 353, • 365, 402, 472.   204.
Glutamic acid, monosodium salt (Monosodium	110, 204, 328, 379, 496.
glutamate).	227 252
Hendecanaldehyde (Undecyl aldehyde) (C <sub>11</sub> )2-Hendecanone (Methyl nonyl ketone)	337, 353. 353.
Hendecenaldehyde (Undecylenic aldehyde)	337, 353.
Hendecenoic acid (Undecylenic acid)	96, 511.
Hendecenol (Undecylenyl alcohol)	337, 353.
2,3-Heptanedione (Acetylvaleryl)	353.
Heptyl alcohol (Heptanol)2,3-Hexanedione (Acetylbutyral)	96, 353. 218.
3-Hydroxy-2-butanone (Acetoin)	218.
γ-Hydroxycaprylic acid, lactone (γ-Octalactone)	337, 353, 402.
4-Hydroxyhendecanoic acid, Y-lactone (Y-Undeca-	337, 353, 402.
lactone).  γ-Hydroxypelargonic acid, lactone (γ-Nonalactone)	337, 353, 402.
Isoamyl butyrate (Amyl butyrate)	337, 353, 365, 402, 409, 472.
Isoamyl caproate (Amyl caproate)	353, 402, 472.
Isoamyl caprylate (Amyl caprylate)	353, 402, 409.
Isoamyl formate (Amyl formate)	337, 353, 402, 409.
Isoamyl isovalerate (Amyl isovalerate)	353, 402, 409. 279, 337, 353, 402, 409, 472.
Isobutyl acetate	279, 353, 402, 409, 529.
Isobutyl butyrate	279, 353, 402.
Isobutyl caproate	353, 402.
Isobutyl isovalerate	279, 353, 402. 402.
Isopropyl pelargonate	

Material	Manufacturers' identification numbers		
FLAVOR AND PERFUME MATERIALS, ACYCLICContinued			
2-Methylhendecanaldehyde (2-Methylnonylacet- aldehyde).	337, 353, 402.		
Methyl hendecanoate (Methyl undecylenate)	337, 402.		
6-Methyl-5-hepten-2-one	353.		
Methyl β-methylthiolpropionate	402.		
Methyl nonenoate (Methyl nonylenate)	337, 402, 472.		
Methyl octynoate (Methyl heptine carbonate)	337,		
Nonyl alcohol (Co)	337, 353.		
Octenoic acid	402.		
n-Octyl acetate	337, 353, 402.		
n-Octyl formate	353, 365, 402.		
n-Octyl isobutyrate	353, 402.		
Pelargonaldehyde (Nonyl aldehyde) (Cg)	337, 353.		
2,3-Pentanedione	218.		
2-Propene-1-thiol (Allyl mercaptan)	402.		
n-Propyl disulfide	54.		
Propyl propionate	353, 402.		
Tricaproin	332.		
Trimethylhendecanaldehyde	213.		
Valerolactone	337.		
CHEMICALLY MODIFIED ESSENTIAL OILS			
Citronella oil, acetone condensate	327.		
Citronella oil, acetylated	409.		
Lavandin, acetylated	337, 402, 409, 472.		
etitgrain oil, acetylated	402, 409.		
Rosemary oil, acetylated	409.		
Sassafras oil, hydrogenated	337.		

369

Although these tables give a fair picture of the aromatics industry as it exists today in the United States, they are incomplete in two important respects. First, they make no mention of a number of companies which produce aromatics but whose activities have not been reported. Secondly, the tables do not of course list the hundreds of new aromatics which are made by various companies for use in specialties.

Spike lavender, acetylated-----

In the following table are given all the numbers of manufacturers listed in the preceding tables, along with the names of the companies which they represent.

Number	Name of Company .
54	Medical Chemicals Corp.
91	Northwestern Chemical Co.
96	Baker Castor Oil Co.
108	Air Reduction Chemical Co.
110	International Minerals & Chemical Corp.
130	Crosby Chemicals, Inc.
204	Great Western Sugar Co.
212	Hercules Powder Co.
213	Verona Chemical Co.
216	Arapahoe Chemicals, Inc., & Arapahoe Special Products, Inc.
218	Fairmount Chemical Co., Inc.
221	Monsanto Chemical Co.
252	Dow Chemical Co.
253	duPont de Nemours, E. I., & Co., Inc.
266	Benzol Products Co.
270	Florida Molasses Corp.
271	Maywood Chemical Works
279	Florasynth Laboratories, Inc.
282	Salvo Chemical Corp.
303	Tennessee Products & Chemical Corp.
327	Colgate-Palmolive Co.
328	General Mills, Inc.
330	Kay-Fries Chemicals, Inc.
332	Verley Chemical Co., Inc.
337	Givaudan Corp.
0.00	

Maumee Chemical Co. 391 Van Dyk & Co., Inc. 398 van Ameringen-Haebler, Inc. 402 Ritter, F., & Co. 409 Fritzsche Brothers, Inc. 423 Lueders, George, & Co. 456 Abbott Laboratories 459 Gamma Chemical Corp.	
<ul> <li>van Ameringen-Haebler, Inc.</li> <li>Ritter, F., &amp; Co.</li> <li>Fritzsche Brothers, Inc.</li> <li>Lueders, George, &amp; Co.</li> <li>Abbott Laboratories</li> <li>Gamma Chemical Corp.</li> </ul>	
402 Ritter, F., & Co. 409 Fritzsche Brothers, Inc. 423 Lueders, George, & Co. 456 Abbott Laboratories 459 Gamma Chemical Corp.	
<ul> <li>409 Fritzsche Brothers, Inc.</li> <li>423 Lueders, George, &amp; Co.</li> <li>456 Abbott Laboratories</li> <li>459 Gamma Chemical Corp.</li> </ul>	
423 Lueders, George, & Co. 456 Abbott Laboratories 459 Gamma Chemical Corp.	
456 Abbott Laboratories 459 Gamma Chemical Corp.	
459 Gamma Chemical Corp.	
100 P 11 G P 0 G	
469 Penick, S. B., & Co.	
472 Felton Chemical Co., Inc.	
474 Shulton, Inc. (Fine Chemicals Div.)	
482 Orbis Products Corp.	
492 Sterling Drug, Inc. (Hilton-Davis Che Co. Div.)	mical
496 Staley, A. E., Manufacturing Co.	
504 Heydon Chemical Corp.	
511 Wallace & Tiernan, Inc.	
525 Farmers' Chemical Co.	
529 Union Carbide & Carbon Corp. (Carbi Carbon Chemicals Co.)	de &
558 Allied Chemical & Dye Corp. (Barrett	Div.
581 Ringwood Chemical Corp.	
599 Bush, W. J., & Co., Inc.	
600 Norda Essential Oil & Chemical Co., Ir	ic.

Fries Bros., Inc.

Newport Industries, Inc.

#### **Instant Coffee**

Instant coffee is steadily growing in popularity in American homes. A nationwide survey, conducted for the Owens-Illinois Glass Co., shows nearly 24 per cent of the instant coffee users now use it exclusively compared with 14 per cent in 1952. It is definitely the most preferred for the coffee break in business offices and factories. Reasons: Less preparation effort, and more for the money.

**Trubek Laboratories** 

353



# The Preparation of Aromatic Aldehydes

# No. 10-Benzaldehydes from Miscellaneous Compounds

#### 1. Oxidative Cleavage of a Propenyl Group

Propenyl groups adjacent to a benzene ring are not usually found in nature. However, many chemicals isolated from natural sources—such as safrol and eugenol—have an allyl group atached to the ring; on treatment with alkalies at elevated temperatures this group may be isomerized to the propenyl group. For example:

The oxidative cleavage of aromatic propenyl compounds proceeds thus:

This reaction is employed in the preparation of such important products as heliotropin from isosafrol, aubepine from anethole, and vanillin from isoeugenol.

#### Oxidizing Agents

Davies and Hodgson<sup>165</sup> investigated the oxidation efficiencies of potassium permanganate and potassium dichromate with respect to the type of functional group to be oxidized. They found

 that potassium permanganate oxidations are most efficient in the case of a symmetrical ethylene linkage (as with stilbene derivatives), and

 that for the oxidation of unsaturated side chains (propenyl group), sodium or potassium bichromate oxidations are far superior.

These findings confirm the concept of resonance, according to which the double bond in stilbene is more

inert (less reactive) than the double bond in the propenyl group. With stilbene derivatives, potassium permanganate—being a more potent oxidizing agent than potassium bichromate—will give primarily the aldehydes, whereas with the less stable propenyl group the process will yield acids. Among the variety of other oxidizing agents, only nitrobenzene is of practical value.

Thus either potassium or sodium dichromate and sulfuric acid in the presence of sulfanilic acid, or nitrobenzene in alkaline solution, are industrially used for the oxidation of a propenyl group.

#### A. Oxidation with Dichromates

This reaction proceeds thus:

3ArCH:CHCH<sub>3</sub> + 2Na<sub>2</sub>·Cr<sub>2</sub>O<sub>7</sub> + 8H<sub>2</sub>SO<sub>4</sub> 
$$\xrightarrow{\text{(O)}_6}$$
 sulfanilic acid

 $3ArCHO + 3CH_3CHO + 2Na_2SO_4 + 2Cr_2(SO_4)_3 + 8H_2O_4$ 

The reaction may be carried out in two ways:

The aromatic propenyl compound, sodium bichromate, sulfanilic acid and water are agitated, and sulfuric acid is gradually added to the mixture; or

The aromatic propenyl compound, sulfuric acid, sulfanilic acid and water are agitated, and an aqueous solution of the bichromate is added.

Usually a slight excess over the theoretical amount of potassium or sodium bichromate is necessary. Sulfuric acid is present in a relatively large amount.

It has been found that the presence of sulfanilic acid is essential to obtain a good yield. This serves two purposes: to act as a dispersing agent, and to protect the formed aldehyde from further oxidation by forming a Schiff's base.

#### Example

The oxidation of isosafrol to heliotropin is an example of this process:

\*Fritzsche Brothers Inc

32.4 g. of isosafrol, 12 g. of sulfanilic acid, 80 g. of sulfuric acid (d. 1.84), and 1,000 cc. water are agitated, and a solution of 44 g. of sodium dichromate in 200 cc. of water is added, over a period of 30 minutes, at a temperature of 30-40° C. The formation of the chromium salt can be observed immediately. After completion of the reaction, the aldehyde is extracted twice with 600 cc. of benzene, and the combined extracts washed first with a 5% aqueous sodium hydroxide solution, then with water. The final yield amounts to 86.5%.

#### B. Oxidation with Nitrobenzene

This process is based on the liberation of oxygen from nitrobenzene:

This type of oxidation is considered milder than that with bichromates, as it produces smaller quantities of tarry by-products.

A procedure that comprises the isomerization of an aromatic allyl group to the propenyl group, followed by oxidation with nitrobenzene and alkali, is efficiently performed in the presence of aniline. The preparation of vanillin from eugenol by this process was described by Bots: 188

100 g. of oil of clove (86% eugenol) are added to a solution of 50 g. of potassium hydroxide and 200 cc. of water and heated. At a temperature of 125° C., 15 cc. of terpenes are removed by distillation. At this temperature 400 g. of aniline are added. The heat is increased to 178° C. until approximately 100 g. of aniline are recovered. The heat is stopped, and the reaction mixture cooled. 300 g. of nitrobenzene and 100 g. of a 5% aqueous sodium hydroxide solution are added and the mixture heated under agitation for 2 hours to 100-105° C. The reaction mass is steam distilled. In the reaction flask remains an aqueous solution of the vanillin salt and azobenzene. The final yield of the aldehyde amounts to 79.3%.

Investigating the oxidation with nitrobenzene, Leopold<sup>169</sup> found the optimum experimental conditions to be a temperature of 180° C. and a reaction time of 2 hours. Generally a 2 N sodium hydroxide solution gives the best results. The amount of nitrobenzene and alkali has little effect on the yield, provided they exceed the required minimum.

Under these conditions various compounds of the general structure

were oxidized, with the following results:

 $R=CH_2OH$  82% of vanillin plus 3% of vanillic acid  $R=CH:CH_2$  80% of vanillin plus 4% of vanillic acid  $R=COCH_3$  81% of vanillin plus 4% of vanillic acid Isoeugenol oxidized in this way yielded 90% of van-

illin.

Noteworthy is the formulation of a propenyl group with hydrogen peroxide-tertiary butyl alcohol in the presence of vanadium pentoxide or chromium trioxide as described by Milas.<sup>169a</sup>

In this reaction hydrogen peroxide adds to the carbon-carbon double bond to form a glycol which under proper experimental conditions will be oxidized to the aldehyde. For example, 5 g. isosafrol are agitated with 45 cc. of the hydrogen peroxide-tertiary butanol reagent. 0.02 g. vanadium pentoxide are added and the exothermic reaction is conducted over a period of 2 hours at the boiling point of the tertiary butanol. The following yields were obtained:

	With	With
	Vanadium Pentoxide	Chromium Trioxide
Anisic aldehyde from anethole	55%	58.3%
Vanillin from isoeugenol	66%	14%
Piperonal from isosafrol	67.5%	12%

#### Claisen Rearrangement

This is of great interest for the preparation of certain hydroxy aldehydes. In this rearrangement the allyl group of phenolic allyl ethers, on heating, migrates to the *ortho* position. If both *ortho* positions are occupied, the allyl group will enter the *para* position. The yields are generally satisfactory (often 90%).

Applying the Claisen rearrangement, Pearl<sup>170</sup> prepared syringaldehyde in good yields, thus:

154 g. of pyrogallol-1, 3-dimethyl ether are treated with 121 g. of allyl bromide and 180 g. of finely powdered anhydrous potassium carbonate, using 400 cc. of anhydrous acetone as the solvent. The resulting 184 g. of 2-allyloxy-dimethoxy-benzene are refluxed at 75 mm. pressure (Claisen rearrangement) to give 4-hydroxy-3, 5-dimethoxyallyl-benzene in a 90% yield. Isomerization using potassium hydroxide and aniline as the solvent yields 4-hydroxy-3, 5-dimethoxy-propenylbenzene, which after oxidation gives syringaldehyde in an 80% yield.

Syringaldehyde (a solid having a m.p. of 109-111° C.) has a strong flowery aromatic scent. It is a valuable perfume ingredient, mentioned quite frequently in perfumery textbooks.<sup>171</sup> It was synthesized some time ago by McCord<sup>172</sup> and Späth<sup>173</sup> but only in poor yields.

#### 2. Reductive Desulfurization of Thiol Esters

The reductive desulfurization of thiol esters to aldehydes proceeds thus:  $^{174}$ 

$$\begin{array}{c} O \\ R-C-SR' \xrightarrow{\quad (H) \quad \ \ } R-C-H \ + \ H_{2}S \ + \ R'H \end{array}$$

Hydrogenolysis of a Thiol Ester. This is accomplished with partially inactivated Raney nickel. For 1 g. of the thiol ester, 10 g. of the partially inactivated nickel should be used. If a larger amount (or standard Raney nickel) is used, the linear alcohol will be formed.

Partial Deactivation of Raney Nickel. Raney nickel is partially deactivated by refluxing it under agitation with two to three times its weight of acetone.<sup>175</sup>

#### Example

Benzaldehyde was prepared in a 62% yield by refluxing 10 g. of ethyl thiobenzoate in 200 cc. of 70% ethanol for 6 hr. in the presence of 50 g. of Raney nickel. After completion of the reaction, the catalyst was filtered off, the alcohol removed by distillation and the aldehyde separated through its bisulfite compound (Wolfrom and Karabinos).

Preparation of Thiol Esters. Thiol esters can be prepared by reacting an acid chloride with an excess of a mercaptan (such as ethyl mercaptan) in pyridine solution, or by the reaction of the acid chloride with lead mercaptide suspended in dry ether.

#### 3. Benzaldehydes from Their Diacetals

The preparation of aromatic aldehydes from their diacetals should be considered in special cases.

Some of the better known acetal syntheses are these:

#### a) The Bodroux-Tschitschibabin Synthesis 176

A grignard compound is reacted with ethyl orthoformate:

$$ArMgBr + HC(OR')_2 \longrightarrow ArCH(OR')_2 + MgBrOR'$$
  
 $ArCH(OR')_2 + H_2O \longrightarrow ArCHO + 2R'OH$ 

yielding from 60 to 75% of the aldehyde.

To start the reaction, the components are dissolved in ether, which is then distilled off. To complete the reaction, the residue is heated on a steam bath.

Recent studies made by Smith and Bayliss177 reveal that the maximum yield in the Bodroux-Tschitschibabin reaction is obtained under the following conditions:

Equimolecular quantities of the Grignard reagent and the ethylorthoformate in ether solution are used; To start the process, magnesium turnings (washed and dried), 10 cc. of ether, and a crystal of iodine are placed in the reaction flask. The halogen compound is mixed with an equal amount of ether, and about 10 cc. of this solution are added to the contents of the flask. After the reaction has started, the rest of the halogen compound, diluted with enough ether to bring the total up to 4.5 moles for 1 mole of the halogen compound, is slowly introduced under efficient agitation. On completion of the reaction, the reaction mass is agitated for a further 15 min. under reflux; then under continuous agitation the orthoformic acid ester, dissolved in an equal volume of ether, is slowly added. The reaction mixture should stand for 15 hr. at room temperature. Then the ether is removed by distillation and the residue heated for 15 min. Hydrolysis will yield the free aldehyde.

#### b) Oxidation of an Alcohol with Bromine

Thiele178 described the oxidation of an alcohol (with bromine) to the aldehyde, which is simultaneously converted to the acetal. The preparation of benzaldimethylacetal is an example of this process:

A mixture of 108 g. of benzyl alcohol and 300 g. of tetramethyl-ortho-silicate is heated to 70° C. The reaction mixture is kept at this temperature and a slow stream of hydrochloric acid gas and 160 g. of bromine is introduced during a 2 hour period. Distillation of the reaction product yields 135.5 g. (89.2%) of benzaldimethylacetal.

#### c) Acetals from Acetylenes

The formation of acetals by the action of acetylenes on alcohols in the presence of a boron-trifluoride-mercuric oxide catalyst is described by Hinton et al. 178

Noteworthy is the preparation of phenylacetaldehyde diacetals from phenylacetylenes, described by Weissbach.180 Phenylacetylenes are reacted with an alcohol in the presence of potassium hydroxide at elevated temperature, under pressure. For example, with n-butanol at 200° (8 hour reaction time) phenylacetaldehyde dibutylacetal and butoxystyrol are obtained. On reaction with n-butanol, butoxystyrol is converted to the above diacetal. The acetal is readily hydrolyzed to yield the aldehyde.

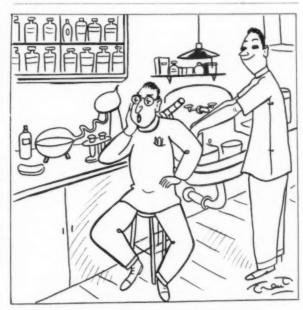
#### 4. Reaction of Aromatic Ethers with N-Bromosuccinimide

This reaction is mentioned because the conversion of ethers to aldehydes is quite unusual.

Okawara, Sato and Imoto 181 reported that they reacted benzyl ethers (such as ethyl or butyl benzyl ethers) in the presence of benzoyl peroxide or under ultraviolet radiation with N-bromosuccinimide and obtained the corresponding benzaldehydes in favorable yields.

166. R. R. Davies and H. H. Hodgson, J. Soc. Chem. Ind. 62 (1943), 90.
167. Germon Patient 207,702, to Frank Fritzsche & Co., Aug. 29, 1905.
168. United States Patient 1,643,805, to R. H. Bots, Sept. 27, 1927.
169. B. Leopold, Acta chim. scend. 4 (1950), 1523.
169a. N. A. Milas, J. Amer. Chem. Soc. 59 (1937), 2342.
170. I. A. Pearl, J. Amer. Chem. Soc. 70 (1948), 1746.
171. e. g., Fred Winter, "Richtsfor und Parlümierungstechnik," Vienna, Springer, 1933.
172. W. M. McCord, J. Amer. Chem. Soc. 53 (1931), 4181.
173. E. Späth, Monats. J. Chem. 41 (1920), 278.
174. M. L. Wolfrom and J. V. Karabines, J. Amer. Chem. Soc. 68 (1946), 1455.
175. A. V. McIntosh and others, J. Amer. Chem. Soc. 71 (1949), 3317.
176. F. Bedroux, Campt. rend. 138 (1904), 92; cf. A. E. Tschitschilobin, Ber. deut. Chem. Ges. 37 (1904), 186 and 850; ibid. 44 (1911), 447.
178. United States Potent, 2,662,099, to W. E. Thiele (to C. J. Opfermann).
179. H. D. Hinton and J. A. Nieuwland, J. Amer. Chem. Soc. 5,52 (1930), 2892; cf. J. A. Nieuwland, R. R. Vogt, and W. F. Foohey, ibid., 1018.
180. German Patent 821, 203, to K. Weissbach, Nev. 15, 1951.
181. M. Okowara, H. Salo, and E. Imele, J. Chem. Soc. Japan, Ind. Chem. Sect. 58 (1955), 924; Chem. Abst. 50 (1956), 12878.

Sellers of everything from automobiles to entertainment try to find out what the customers want. Then they give it to them at a price the customers can afford. Under the system of free choice at the point of sale, the customer is a true king and his wish (usually hers) expressed in millions of purchases makes or breaks a manufacturer .- William Feather.



"I've discovered so many beauty aids and my wife won't use any of them!"

# Excellent Papers at T.G.A. Meeting

Seven papers by recognized authorities in their respective fields attract an attendance of over 400 at semiannual meeting



Dr. Emil G. Klarmana

An excellent program of seven papers by experts in their respective fields attracted an audience of over 400 at the semi-annual meeting of the Scientific Section of the Toilet Goods Assn. in the Waldorf Astoria Hotel, New York, December 9.

Dr. Emil G. Klarmann acted as chairman of the meeting with his usual skill and called upon numerous scientists in the audience for discussions on the various papers.

Both morning and afternoon sessions were held with luncheon between the sessions.

Papers presented were:

Polyethylene Oxide Gums in Toilet Goods, by Lloyd Osipow and Lester D. Berger, Jr., Foster D. Snell, Inc. and Union Carbide Chemicals Co., respectively.

Cutaneous Antiseptic Activity of 3, 4, 4'—Trichlorocarbanilide, by Daniel P. Roman, E. Harvey Barnett, and Robert J. Balaske, Monsanto Chemical Co.

The Effect of Fluorides on the Solubility of Powdered Tooth Enamel, by S. D. Gershon, O. W. Neiditch and R. H. C. Lee. Research and Development Division, Lever Brothers Co.

Use of the Patch Test in Estimating Hazards to the Skin, by Harry L. Rubenkoenig and Robert A. Quisno, Hill Top Research Institute, Inc.

Silicone Defoamers—Physiological Aspects and Defoaming Efficiency, by R. C. Gergle, W. T. Gregory and C. W. Todd, Dow Corning Corp.

Further Laboratory Studies of Potential Anti-Seborrhoeic Agents, by Irwin I. Lubowe, M.D., Assistant Clinical Professor, Department of Dermatology, New York Medical College, Metropolitan Hospital Center.

The Effect of Creams and Lotions on the Moisture Retention on the Skin, by Charles Fox and Donald H. Powers, Warner-Lambert Pharmaceutical Co.

Abstracts of some of the papers follow.

#### Cutaneous Antiseptic Activity of 3,4,4'—Trichlorocarbanilide—by Daniel P. Roman, E. Harvey Barnett and Robert J. Balske, Monsanto Chemical Co.

A new bacter ostat for toilet soaps, 3,4,4'-trichloro-carbanilide (TCC), demonstrates superior skin degerming activity as measured in handwashing tests. A concentration of 2.0% in soap quickly and consistently reduces the number of resident skin bacteria.

TCC demonstrates extremely high in vitro activity against gram positive organisms normally resident on the skin. At a 50:1 ratio of soap to bacteriostat in nutrient agar, TCC inhibits *Micrococcus pyogenes* var. aureus at a dilution of 1:30,000,000. TCC is color stable,

it remains white when expessed to light or the presence of iron.

Toxicity tests show that TCC is safe to use. It is neither a primary irritant nor a skin sensitizer.

# Silicone Defoamers Physiological Aspects and Defoaming Efficiency—by R. C. Gergle, W. T. Gregory and C. W. Todd, Dow Corning Corporation.

Silicone defoamers exhibit a good combination of properties as far as the food, drug and cosmetic chemist is concerned. Defoaming efficiency is excellent since only a few parts per million control normal foam. Toxicological inertness has been established by laboratory feeding tests and by controlled ingestion by humans.

A brief discussion of foams and silicone defoamers helps to establish the background on such systems. Various defoaming applications in the medical, food, and cosmetic fields are reviewed, along with the desudsing effectiveness and other properties of silicone fluids in selected handcream formulas. A laboratory foaming test for defoamers is presented. Several foaming systems are tested using this method.

Silicone defoamers provide the chemist and engineer with a useful technique for foam control.

# The Effect of Fluorides on the Solubility of Powdered Tooth Enamel—by S. D. Gershon, O. W. Neiditch and R. H. C. Lee Research & Development Division, Lever Brothers Co.

A standardized procedure for determining the solubility of powdered enamel, before and after treatment with fluoride solutions, is described. The method used takes into consideration the need for removing reagent precipitates and reaction products prior to the determination of the solubility.

The experimental observations confirm reports that the solubility of dental enamel in acid is reduced following application of fluorides and lead to the conclusion that the reduction of enamel solubility is dependent on the concentration and pH of the fluoride solution. Buffered acidic fluoride solutions are more effective in reducing enamel solubility than unbuffered solutions. At pH levels between about 3 and 9, sodium fluoride is slightly more effective than stannous fluoride in reducing enamel solubility in acid. Below pH 3, stannous fluoride is more effective than sodium fluoride.

The *in vivo* significance of these results will not be evident until adequate correlation with appropriate clinical studies has been made. Additional studies to determine the acceptability for topical application of phosphate (0.5 M) buffered (pH 4 and pH 5) sodium fluoride solutions are indicated.

Polyethylene Oxide Gums in Toilet Goods—by Lloyd Osipow and Lester D. Berger, Jr., Foster D. Snell, Inc., New York and Union Carbide Chemicals Company, Division of Union Carbide Corporation, New York, respectively.

Toilet bars based on synthetic detergents are expected to show widespread gains as the result of a new watersoluble polymer developed by the Union Carbide Chemicals Company. In spite of the marked superiority of these syndet bars over soap in hard water, sales have been sluggish. In part, this is due to the low lubricity of both the lather and the adsorbed detergent film on the skin. This results in a sensation of dryness. Application studies by Foster D. Snell, Inc. have demonstrated that lubricity exceeding that of soap can be achieved by including one or two per cent of the new polyethylene oxide gums in the syndet bar. An extra dividend is the improved creaminess of the lather.

Toothpastes, shampoos, shaving preparations and cosmetic creams and lotions also benefit from the enhanced lubricity imparted by these gums. Mouth feel imparted to toothpastes containing these water-soluble polymers is unusually pleasant.

The polyethylene oxide gums are manufactured from petroleum-derived ethylene oxide using special catalysts. Dilute solutions in water have high thickening efficiency. The gums are compatible with detergent solutions, electrolytes and many organic solvents. They show a low order of toxicity. In a ninety-day feeding test, four per cent in the diet of rats was without effect. Evaluation

of the gums in a guinea pig sensitization test by both intradermal and topical methods of application resulted in sensitization of none of the animals tested.

The Effect of Creams and Lotions on the Moisture Retention of the Skin—by C. Fox and D. H. Powers, Warner-Lambert Pharmaceutical Company.

Studies on callus tissue in recent years have revealed that the water content of the stratum corneum plays a prime role in determining the softness and flexibility of the skin. This concept has been of vital interest to the toilet, cosmetic and pharmaceutical industries where Product Research is constantly striving to develop more efficaceous skin softening preparations.

Accordingly, a study was undertaken to measure the effect of various types of materials, such as fats, oils, waxes, esters, humectants, wetting agents and emulsifying agents on moisture retention by the skin.

In these experiments a simply designed moisture collecting chamber was designed to measure the moisture loss of the skin surface. By applying thin films of test materials to a small area of the inner forearm and using an adjacent untreated area as control, it has been possible to measure the relative efficacy of these materials in retarding or accelerating moisture loss from the surface of the skin.

Such experimentation should lead to a better understanding of the specific effect of various raw materials around which products with improved skin 'moisturizing' and 'softening' properties may be formulated.

# Sales of Soaps and Detergents

Sales of soaps and synthetic detergents set a new nine months record topping last year's all-time high for the first three quarters by 3% tonnage-wise and 8.4% in dollar value. According to the quarterly Sales Census conducted by the Association of American Soap & Glycerine Producers, Inc., seventy-two manufacturers, representing a substantial portion of the industry, reported nine months 1957 sales of soaps and synthetic detergents totalling 3,145,194,000 pounds with a dollar value of \$760,881,000 compared to nine month sales in 1956 of 3,053,796,000 pounds and \$702,203,000.

Tonnage sales of synthetic detergents, solids and liquids, totalling 2,224,604,000 pounds for the first nine months this year were up 7.8% over the same period

a year ago. Dollar sales amounting to \$518,977,000 were 12.7% ahead of last year. Synthetic detergent sales for the first nine months this year represent 70.7% of the total market tonnage-wise and 68% in dollar value.

Sales of soaps, solid and liquid, for the first nine months this year were 920,590,000 pounds and \$241,904,000 a decline of 7% tonnage-wise from the same period in 1956. The dollar value of sales were approximately the same for both nine month periods.

Liquid synthetic detergent sales continue their advance. For the first nine months this year, sales amounted to 255,264,000 pounds, up 31% over 1956. Dollar sales totalling \$93,688,000 were 18.4% over the same period last year.

#### **Delegating Doesn't Hurt**

Delegating seems simple: Just decide what someone else can do to make your job easier, then tell him to do it. But it involves the complicated relationships between the most complicated and sensitive machines in the world—people. With these machines, one plus one does not always equal two.

The gist of delegating is that it is a means for making the enterprise stronger by developing its human resources. It is not limited to the few top executives. It spreads to the grass roots of the organization. Its success hinges upon the relationship between leader and

These relationships are in marked contrast to those that existed with many old-style bosses who did all the decision-making, issued orders, and took the credit for successes and blamed others for the failures. For success in delegating, it is useful to bear in mind the leader's basic functions:

Set work goals with the group.
 Help them reach those goals.
 Co-ordinate the workers.
 Help each individual to fit into the work group.
 Work for the success of the group rather than one's own record.
 Practice "humanness"—consideration.—Donald Laird in American Business, abstracted by Executives Digest.

It isn't surprising to hear a businessman ask: "Why is it that though we do a good volume of sales nationally, and enjoy a good profit, that so few people know us?" There are many firms in that position. What they lack is a "consumer relations" program, and that their advertising make a "conversation" piece. These are getting to be a must if a firm wants to hold its own in the coming era of severe competition.—Louis Schneider.



LANOLIN CHOLESTEROLS in their most active form.

The Amerchols are non-ionic, natural EMULSIFIERS, PENETRANTS and EMOL-LIENTS made from pure lanolin. They will help you achieve superior cosmetic and pharmaceutical formulations by markedly improving stability, texture, appearance and effectiveness.

An Amerchol such as multi-sterol, liquid Amerchol 101 enhances softening, penetrating and spreading activity while holding desirable moisture to the skin. The surface active Amerchols function at the interface in oil-in-water emulsions to bring about these unique effects on skin and hair.

The Amerchols are ideal, stable ointment bases which induce rapid drug release, and promote optimum healing rates.

WE KNOW OF NO CASE OF AN ALLERGY DUE TO AN AMERCHOL.



American Cholesterol Products

AMERCHOL PARK EDISON NEW JERSEY

Write on your business letterhead for technical literature and suggested formulas.

#### Abstracts of Papers on

#### "The Biology of Hair Growth"

continued

"Hormonal Factors".

Melvin P. Mohn, Dept. of Anatomy, State University of New York, 450 Clarkson Ave., Brooklyn 3, New York

Previous investigations on the effects of hormones on hair growth have been limited to observations on the spontaneous replacement of hair. The present studies provide information on the influences of hormones by comparing spontaneous replacement to growth initiated by plucking the hair from resting follicles in gonadectomized, adrenalectomized, hypophysectomized, thyroid hormone deficient, diabetic, and intact male and female black rats. The effects of various hormone preparations have also been observed in these experimental animals.

In the rat spontaneous growth starts periodically in the belly skin and spreads dorsally as a wave; in plucked areas the follicles grow simultaneously. Once a hair follicle becomes active, its cycle of growth is the same regardless of how activity is initiated. In the rat growth of a hair normally requires about 26 days, when growth ceases, and the follicle remains quiescent until activity is again initiated.

Male rats have coarse hair, and their moderately thick skin is covered with flakes of oxidized lipoid. The pelage of females is finer, the skin has no lipoid scales, and spontaneous growth waves tend to lag behind those of males. The cycle of growth in each follicle, however, is the same in both sexes. Sex differences disappear after gonadectomy; the fur is intermediate in texture between that of males and females, and spontaneous growth resembles that of normal males. Regrowth after plucking is normal.

Daily treatment with estrogen retards the initiation and the rate of both spontaneous and induced hair growth in gonadectomized, adrenalectomized, hypophysectomized, or thyroid hormone deficient animals. These effects become masked by the accelerating effects of adrenalectomy or hypophysectomy. Estrogen induces the growth of fine, sparce hair in all animals except those which have been hypophysectomized. Thus, estrogen produces some of its effects on hair growth independent of the adrenal cortex. Daily treatment with androgen has no apparent effect on hair growth except that it promotes a coarse pelage in all except the hypophysectomized rat.

During pregnancy and lactation spontaneous replacement of hair is noticeably retarded. Hair growth, however, is transiently accelerated when the young are removed from the mother; induced growth by plucking is normal in these animals. These effects are not duplicated when progesterone is given to intact females, but are partially simulated when luteotrophin is administered to females that have been nursing for a few days.

Adrenalectomy accelerates the initiation and the spread of spontaneous follicular activity, but has no effect on the rate of growth of the individual follicles; induced growth is normal and the pelage is unaffected. Conversely, daily treatment with small doses of cortisone inhibits the spontaneous initiation of hair growth in the intact, gonadectomized, or adrenalectomized rats. Once growth has started, however, cortisone has no effect. There is no cumulative effect after long periods of treatment with cortisone, and the follicles do not become

"refractory" to the hormone. Large doses of cortisone completely inhibit hair growth in intact rats, except in those follicles which had been plucked 4 or 6 days before the administration of the hormone. All hair growth is inhibited when propylthiouracil-treated or hypophysectomized animals are injected together with small doses of cortisone. In all of these cases growth commences as soon as the cortisone is discontinued.

ed

of

on

he

es

by

ed

0-

id

le

ns

S.

in

ed

ıl-

ρ.

h

h

y

e

d

f

r

n

Continuous treatment with adrenaline inhibits spontaneous hair growth in intact animals and delays the response to plucking, but once growth has started it proceeds normally. Prolonged treatment with adrenaline produces a local inhibition of spontaneous or induced growth. Growth waves tend to bypass the area of injection, and induced growth is locally retarded. The hairs which eventually grow near the sites of injection of adrenalin have no pigment. These effects are neither mediated or potentiated by thyroid hormone. They are, however, partially linked to adrenocortical activity. Adrenalin inhibits hair growth more in cortisone-treated adrenalectomized rats than in adrenalectomized animals not receiving cortisone; the effects are not due to the cortisone.

Spontaneous replacement is markedly retarded in alloxan-diabetic animals, but after an initial delay induced growth is normal. Phlorhizin treatment does not appear to affect hair growth despite a continued glycosuria and hypoglycemia. Insulin restores spontaneous replacement to normal in alloxan-diabetic animals and tends to enhance growth in intact animals despite the low level of glucose in the blood. Glucose-treated intact animals, on the other hand, display normal regrowth after plucking whereas spontaneous growth is often retarded. It seems likely, therefore, that insulin is more directly involved in hair growth than is glucose. Perhaps insulin regulates the utilization of glucose from the blood during the early stages of growth in the hair follicles.

Continued intake of propylthiouracil that produces a deficiency in thyroid hormone inhibits the spontaneous waves of hair growth. Except for an initial delay, however, induced growth is normal in animals deficient in thyroid hormone. Injections of thyroxine accelerate spontaneous replacement of hair in propylthiouraciltreated rats and in normal animals; the cycle of growth, however, remains normal regardless of how activity is initiated. Thyroxine and cortisone have antagonistic effects on hair growth, and one hormone can be used to offset the effects of the other. No such relationship is found between thyroxine and gonadal hormones.

Hypophysectomy accelerates the initiation and spread of spontaneous follicular activity, but has no effect on the rate of growth. The cycle of growth is normal after plucking, but the pelage is infantile. The administration of ACTH has an inhibitory effect on hair growth in intact, gonadectomized, and hypophysectomized rats, but is without effect in adrenalectomized animals. ACTH retards the initiation of growth, but the actual rate of hair proliferation is not affected in either the clipped or plucked follicles. This inhibition of hair growth is obviously mediated through the adrenal cortex. The pituitary seems to exert a restraint on hair growth by means of the adrenal cortex. Hypophysectomy removes this restraint.

The influences of growth hormone on the hair follicle are still not completely clear. Implants of pituitary tissue or injections of growth hormone restore the pelage of hypophysectomized rats to an adult texture. Since the hair remains infantile in hypophysectomized rats treated with gonadal hormones, it would appear that sex hormones modify the type of hair produced only if growth hormone is present. Aside from this effect, growth hormone has no obvious influence on hair growth.



The MODIFIED LANOLIN with new properties.

Modulan is the acetyl derivation of pure lanolin containing all the constituents of lanolin, modified by a unique treatment to impart NEW and VALUABLE PROPERTIES. (U. S. Patent No. 2.725,334)

Modulan forms clear solutions even in cold mineral oil and deposits hydrophobic, emollient films on skin and hair. These desirable protective films are waxy rather than tacky and are very pleasant to the touch.

Modulan is extremely hydrophobic—does not form greasy emulsions and is practically odorless. Because of its outstanding stability and compatibility with oil-in-water emulsions and with soaps and shampoos. Modulan is particularly recommended for use in creams, lotions. baby products, hair preparations, make-up, and ointments.

CLINICAL INVESTIGATIONS HAVE INDICATED THAT MODULAN IS HYPO-ALLERGENIC.



American Cholesterol Products

AMERCHOL PARK EDISON, NEW JERSEY

ACETULAN—a new chemical

design for cosmetics.

### "Regeneration, Wound Healing and 'De Novo' Formation".

R. E. Billingham, Dept. of Zoology, University College, University of London, London, England.

The many investigations which have been carried out on the hearing of cutaneous lesions caused by a wide variety of injurious treatments—e.g. the topical application of carcinogens, freezing in situ, X-irradiation, burning or the excision of thin shavings—have provided evidence of the remarkable capacity of hair follicles to regenerate provided that the dermal papillae survive and make contact with living epidermal cells again. Once the dermal papillae have been destroyed, regeneration does not normally take place, however faithfully the fine fibrous architecture of the dermis, including the connective tissue follicle "sheaths," may have been preserved.

Recent studies on the healing of extensive wounds produced by excision of the full thickness of the skin from the sides of adult rabbits' chests have shown that if the process of wound contracture is arrested artificially, or fails to proceed to completion of its own accord, de novo formation of hair follicles takes place. The wound becomes first filled with granulation tissue which is resurfaced by epithelium that grows in from the margins. Within about 40-50 days this epithelialized scar tissue is transformed into a sort of ad hoc skin by the emergence of a dense crop of new medullated hairs. The new follicles possess well developed sebaceous glands but they lack arrector pili muscles and pigment, despite the fact that all the rabbits used belonged to pigmented breeds. The evidence suggests that these hairs are of completely new formation and have not originated from follicle remnants left behind in the wound

Unequivocal evidence that completely new follicles can be formed in a dull animals is forthcoming from our knowledge about the antlers of deer. These deciduous organs are shed in mid-winter and regenerated during early spring. They are completely covered by a layer of typical, hair-bearing, cervine skin—the so-called "velvet"—until they are fully grown and have reached maturity. The hairs in the velt are pigmented and have well-developed sebaceous glands but, like the new hairs which appear in the wounds in rabbits' skin, they lack arrector pilorum muscles. Thus, the deer regenerates each year throughout life, a relatively large area of new skin complete with its complement of hair follicles. In the light of this evidence the rather rigid view of the older authorities that hair follicles can only be formed a birth or thereabouts can no longer be sustained.

#### "Regional Frequency Distribution of Hair Follicles and Sweat Glands in the Skin of Man."

George Szabo, Dept. of Anatomy, London Hospital Medical College, London, England.

There is a great individual and regional variation in the frequency distribution of hair follicles and sweat glands in the adult skin. The combined averages for cm<sup>2</sup> of fixed skin are 980 for the head, 270 for the trunk, 250 for the arm, 190 for the leg. In spite of gross differences there is no significant sexual variation in the distribution of hair follicles in the face.

In the fetus the density of the appendages is higher than in the adult; the regional variation, however, is smaller and it increases during postnatal development. The differential rate of growth of the body surface is responsible for these regional variations in the adult. Initially, the density of distribution of the appendages appear to be similar over the entire body, but later the appendages become spaced farther apart in the trunk and extremities than they are in the head. The relative numbers of hair follicles to sweat ducts, however, vary from region to region even in the fetus, and hairs are relatively more abundant in the head.

It is assumed, therefore, that hair follicles do not increase after they have been formed in the fetus, and that their relative numbers appreciably decrease.

#### Permeability of Polyethylene

Two reports of investigations into the permeability of polyethylene have been released by the Air Force. They are:

Investigation of the Effects of Molecular Weight, Chain Branching, and Irradiation on Polyethylene with Regard to Shelf Life in Bottles. J. Pinsky, A. R. Nielsen and J. H. Patliman, Plax Corp. September 1956. 85 pages \$2.25. PB 121696. Four commercial raw materials were blow-molded into standard 4-ounce Boston round Plax bottles. The samples were studied for effects of higher molecular weight, side chain branching, and irradiation by electron bombardment. Changes in permeability are tabulated and compared with the results of earlier tests. One conclusion was that despite considerable differences in permeability, the packageability of a material is not generally changed.

#### The Package

The public sees a new package design and either likes it or doesn't. But little does the consumer know it took many months, and sometimes a couple of years, to come into being. There were hundreds of communications and teamwork powwows among market researchers, package consultants, advertising agencies, commercial artists,

material suppliers and topflight corporate management. In creating a new design or package, there is no such thing as compromise, or yielding to a dominating personality. It is made to win.—Gordon Lippincott.

#### Salesmen's Expense Accounts

The Drug, Chemical and Allied Trades section of the New York Board of Trade has taken a look into the business of salesmen's expense accounts—not to see what the salesmen are doing about them, but to see what their companies are doing.

The survey disclosed that 41 percent of salesmen are using their personal cars, for which they are compensated by the employer, chiefly by mileage allowances. Seven cents per mile is the payment made most generally, although in New York area 27 percent of the companies pay their salesmen 8 cents. Only 19 percent of the employers make a direct payment for depreciation of salesmen's cars, most including that in the mileage allowance.

Payment for liability and property damage insurance on personally-owned cars is made by 58 percent of the firms, 47 percent also providing comprehensive fire and theft coverage and 42 percent assuming the cost of medical expense riders on automobile policies.

Throughout the country, between 78 and 86 percent of the employers reimburse salesmen for parking fees, etc.

For Fin

Greater

CHEM



For Finer Fragrance . . . Greater Dermatological Safety

CHEMODERMS by FIRMENICH

Seven years of original research have been rewarded by the discovery and development of a new group of controlled and reproducible perfume compositions for cosmetic and pharmaceutical products. We call them CHEMODERMS, for their chemical purity and dermatological safety. Exhaustive tests prove them free of primary irritants. Leaders in the treatment of allergies hail them as an important step in the elimination of sensitivity to perfumes. Now available in ten of the most desirable, panel-accepted fragrances. CHEMODERMS will enhance your next cosmetic creation, enlarge your markets, and enliven your presentations and promotions with vital and timely appeals.

FIRMENICH INCORPORATE



250 WEST 18TH STREET, NEW YORK 11 FIRMERICH OF CARADA, LIMITED, 948 WALLACE AVENUE, TOPONTO CHICAGO OFFICE: BLY NORTH MICHIGAN AVENUE LOS ANGELES, 1756 MALFOLM AVENUE BLYNEYA PARIS LODON



The cosmetics chemist has learned from the motivational research psychologists that the most intimate emotional factors influence a woman's choice of cosmetics — and chief among them is scent.

That's why he attaches such great importance to fragrance . . . and so frequently uses Verona products as developers and extenders to bring out the latent brilliance of the compound.

Why not test some of the Verona specialties listed at the right. See how successfully they help you hit, and *hold* the piquant round notes and top notes that you want your products to have. We will gladly send samples on request.

#### A FEW VERONA SPECIALTIES

RESEDALIA, an acetal.

VERONOL, an aldehyde.

CYCLAMAL, cyclamen aldehyde.

ROSANOL, an acetal.

PHENYL ACET ALDEHYDE PHENYL GLYCOL ACETAL

TERTIARY BUTYL DI METHYL CUMARIN

ORYCLON

FLOWER OIL WHITE LILAC.



PRODUCTS BUILD SALES FOR

**PRODUCTS** 

# FLAVOR



MORRIS B. JACOBS, Ph. D.

# Toxicity of Safrole

The physiological effects of a natural flavoring material, safrole, an isolate from oil of sassafras, are being reinvestigated and evaluated. . . . Action by Food and Drug Administration

For some time there have been questions raised among flavor manufacturers and flavor chemists concerning the relative toxicity of safrole. This has been an undercurrent but has finally been brought out into the open by the Food and Drug Administration's appeal for information relating to the toxicity of safrole.

#### **Toxicity Question Raised**

Evidence raising the question of the physiological effect of safrole was submitted by a commercial laboratory which was doing investigative work for a large food manufacturer to the Food and Drug Administration. As a result of this study and possibly of their own work, George P. Larrick, Commissioner of the Food and Drug Administration, U. S. Department of Health, Education, and Welfare sent out a letter in November of 1957 saying, "The question about toxicity (of safrole) must be resolved at the earliest possible moment. . . We will appreciate any pertinent information you have and we hope you will forward it to us in the next thirty to sixty days."

#### Safrole

CETAL

Safrole, very often spelled safrol, 4-allyl-1, 2-methylenedioxybenzene,

CH2-CH = CH2

is a colorless to slightly yellowish liquid at room temperature. Other chemical names for this compound are allylpyrocatecholmethylene ether an d1,2-methylenedioxy-4-allylbenzene. Safrole has a pleasant sassafras odor and flavor. It melts at 10-11 deg. C. and congeals at about the same temperature. It boils at 232 to 234 deg.

C. and under reduced pressure (10 mm Hg) at 100 deg. C. Its specific gravity is in the range 1.096 to 1.105 and it has a refractive index of 1.5383-1.5385 at 20 deg. C. Safrole is insoluble in water but is soluble in alcohol.

#### **Essential Oils**

It is well known that safrole is the principal component of oil of sassafras, the volatile oil obtained by steam distillation from the root of Sassafras albidum (Nuttall) Nees, Fam. Lauraceae, which contains according to Power and Kleber, Pharm. Rev., 14, 101 (1896) 80 per cent of safrole. It must be stressed, however, that safrole is a component of many other essential oils. For instance, the work of Foote, J. Am. Pharm. Assoc., 27, 574 (1938) showed that 90 per cent of the oil of Illicium parviflorum is safrole. Guenther in his treatise, The Essential Oils (Van Nostrand, Princeton, N. J.) points out that safrole is a minor component of such essential oils as nutmeg oil, cinnamon leaf oil, California laurel oil, and American wormseed oil. Safrole is also a principal component of Brazilian sassafras oil, Ocotea cymbarum (O. pretiosa). Hickey found this oil to contain 92.9 per cent of safrole, (J. Org. Chem., 13, No. 3, 443 (1948)). Safrole is also found in star anise oil and in camphor oil.

#### **Physiological Effect**

Gleason, Gosselin, and Hodge in their book, Clinical Toxicology of Commercial Products (Williams and Wilkins, Baltimore, 1957), describe the physiological response induced by oil of sassafras (80 per cent safrole) as similar to that induced by oil of eucalyptus or eucalyptol. The symptoms caused by the latter oil include a burning sensation over the stomach with nausea and vomiting, dizziness, muscle incoordination, muscle weakness, and stupor also may occur. Paleness and sometimes cyanosis, respiratory symptoms and eye effects. With oil of sassafras the symptoms of vomiting and circulatory collapse are more common and the respiratory and eye symptoms are less common.

#### **Poisoning Cases**

A rapid review of the literature does not disclose too many instances of poisoning but they are sufficient to cause wonder that the thought concerning the toxicity of safrole should cause surprise. Thus it is noted in

Osol and Farrar, The Dispensatory of the United States of America (25th ed., Lippincott, Philadelphia, 1955), that the Cincinnati Lancet-Clinic carried an item in December 1888 that a teaspoon of sassafras oil produced vomiting, collapse, somewhat dilated pupils and pronounced stupor in a young man. This text also cites a report by Hefter in 1894, that safrole is slowly absorbed from the alimentary canal and escapes through the lungs in an unaltered state and through the kidneys where it is oxidized to piperonalic acid. In addition it is noted that when safrole is taken in sufficient dose, it kills quickly by a paralysis of the central respiration which effect is preceded by great depression of the circulation. When it is ingested in smaller though still toxic amounts, it causes death by widespread fatty degeneration of the heart, liver, kidneys, and other organs.

In 1915 Kläsi and Roth reported in *Monatsschr*, f. *Psych.*, 1915, 235, a case of poisoning by safrole which was ingested as part of a mixture called Macassar oil. used in Java as a rubefacient. The symptoms produced were disturbed orientation, hallucinations, and nausea. There was complete recovery which began after 17 days.

Macht reported in the J. Am. Med. Assoc., 110, 409 (1938) that oil of sassafras is readily absorbed through the normal skin and produces marked physiological effects.

A more recent instance of poisoning was described by Craig, in *Arch. Disease Childhood*, 28, 475 (1953) in which five children who had ingested sassafras oil recovered probably because of the prompt administration of emetics.

#### Toxicity

The question then arises can one make a rough estimate of the toxicity of safrole in view of these apparently authenticated instances of poisoning? Gleason, Gosselin, and Hodge have attempted to do this. They indicate that sassafras oil is considered to be near the borderline between their classes 4 and 5 of toxicity. In their system substances in class 1 are practically nontoxic; class 2 comprises substances that are slightly toxic; in class 3 they place those substances that are moderately toxic; in class 4 those that are very toxic; in class 5 those that are extremely toxic; and in class 6 those that are supertoxic. Thus with respect to safrole or sassafras oil or oil of ocotea cymbarum placement in class 4 or 5 would mean that death might ensue from the ingestion of from 50 to 500 milligrams per kilogram body weight or between 1 teaspoonful and 1 ounce per 150-pound man (class 4-very toxic) to death might ensue from the ingestion of from 5 to 50 milligrams per kilogram of body weight or the ingestion of from 7 drops to 1 teaspoonful by a 150-pound man.

Spector in *Handbook of Toxicology*, (W. B. Saunders Co., Philadelphia, 1956) cites the approximate minimum lethal does (MLD) for a rabbit by oral administration as 1 gram of safrole per kilogram of body weight; the approximate MLD by subcutaneous injection as 1 gram of safrole; and the MLD by intravenous injection as 200 milligrams of safrole per kilogram of body weight of the rabbit

In this connection one might also refer to one preparation mentioned by Gleason, Gosselin, and Hodge. They tabulate the formulation of a denture adhesive as consisting of gum tragacanth powder 75 parts, gum karaya powder 24 parts, flavored with 1 part of sassafras oil. They give this product a toxicity rating of 2, that is a product that is slightly toxic and one which would require the ingestion of almost impossible amounts, namely, from 1 to 2 pounds to be lethal to a man weighing 150 pounds, that is from 5 to 15 grams per kilo-

gram of body weight.

If all of the toxicity of this preparation were assigned to the sassafras flavor then it can be calculated that a lethal dose would range from 50 to 150 milligrams per kilo of body weight, that is, from 4.5 to 9 grams per 150-pound man.

After the initial report to the Food and Drug Administration concerning the possible toxicity of safrole, there were six studies made by commercial laboratories which were reported to this agency. In three of these investigations, safrole was fed to rats in quantities that ranged from 0.1 per cent of the total food fed to somewhat more than 0.5 per cent for periods of 90 days and 166 days. In the three other studies, rats were fed flavors containing safrole so that different percentages of the substance were in the diet. All of the six investigations indicated that liver damage occurred.

In the investigations made by the Food and Drug Administration, itself, diets containing 50, 250, and 1000 parts per million of safrole were fed to rats. The results showed that at the highest dosage level there were slight liver changes while at the lower dosage levels, there did not appear to be any changes resulting from the safrole-bearing diet.

Summarizing the evidence thus far presented to it and from its own experiments, the Food and Drug Administration stated, "The experiments indicated that at certain feeding levels, safrole is a toxic substance. The exact level at which toxicity occurs in the rat is not known because in all experiments reported there is the possibility that some of the safrole incorporated in the food was dissipated from the food cups before the animal obtained it. It is apparent that safrole incorporated with other flavoring materials in flavors continues to exert its toxic effect on rats.

"Acute studies on dogs indicate that this species is more susceptible to the toxic effects of safrole than rats. We have no data on the subacute or chronic effects of safrole on dogs."

It must be stressed that in all these experiments, even those in which the subacute effects on rats were studied, the amount of safrole and flavor fed was far in excess of the quantities that are normally consumed by human beings.

#### **Natural Flavors**

In a number of prior articles in this section, I stressed the fact that one must never assume that the term "natural" or the term "pure" are synonymous with the terms "nontoxic" or "safe." Both safrole and coumarin are naturally occurring substances and are principal components of naturally derived flavoring materials. Without in any way attempting to prejudge the study of the toxicity of safrole and safrole-bearing flavoring materials on these are important in a number of flavors such as root beer, sarsaparilla, birch beer, and as noted above in some dental and mouth wash preparations, it is again well to point out as I did in my discussion concerning coumarin that the toxicity of a given flavoring matter must be evaluated by investigations that are meaningful and that are not influenced by whether or not the material is a "natural product" or a synthetic, especially a synthetic substance in the sense that there is no counterpart of the compound in nature.

Observable symptoms are meaningful. Gross pathological findings and changes are undoubtedly important. Animal attitudes, particularly of larger animals such as dogs and cats, are also very important. Nevertheless, in interpreting results and coming to conclusions, one must always remember that one cannot ask a dog if he has a headache!

# another RICHFORD First:

# TOUCH-N-SPRAY

THE ALL PURPOSE AEROSOL
PERFUME ATOMIZER
FOR THE PURSE

TOUCH-N-SPRAY Refillable ...

Long Gold Metal cap to prevent accidental activation.

So easy to use—so light in weight—so very, very smart.

Write NOW for samples and prices



Offices & Plant 3618 Oceanside Road Oceanside, New York

Salesrooms 350 Fifth Avenue New York, N. Y.





1.







#### 1. BOYLE & CO.

Fire engine red has been expertly used by Boyle & Co. on its new tube and box for Flavihist Penetrating Heat Rub. Extra color intensity on the collapsible tube by Sheffield Tube Corp. is made possible by a new and improved process of lithography. Pharmaceutical concerns such as Boyle are paying increased attention to color and design, even on prescription items.

#### 2. JOHN H. BRECK, INC.

Breck Banish Dandruff Treatment Shampoo is a new preparation introduced to consumers January 1st, retailing at \$1.50 (no Tax) for an eight ounce bottle packed in a gold foil box. A semipermanent gold foil counter display is available, holding twelve eight-ounce containers. Advertising support will consist of television, national magazines, daily newspapers and Sunday Supplements. Spearheading the advertising campaign is the Shirley Temple Story Book series of TV Spectaculars which started January 12th.

#### 3. SCHIAPARELLI

The new Schiaparelli "Si" perfume is packaged in a stylized gold Italian wine bottle, highlighted with bright orange velvet ribbon and matching Schiaparelli seals. The bottle has a golden atomizer gracefully curved to compliment its own lines. It rests on a gold and orange platform inside a Greek column cover of fluted gold. The outside box wrapping has a musical score motif in gold, black, and orange on a white background. The 2 oz. bottle is \$38 plus tax.

#### 4. BOURJOIS

Scheduled to go on sale February 1st, this "Evening in Paris" Deodorant Duo offers two regular 75¢ deodorant sticks at the sale price of \$1.00. The deodorant sticks are packaged in a star-studded pink, blue and white display boot. A typical Parisian scene in one corner of the boot gives the unit an added continental flavor. A plastic pushtube encircles each deodorant stick. This promotion will be nationally advertised during March and April.

#### 5. HADOX CORP.

"Suds 'n' Rinse', a new liquid Cool Water Soap Sachet in a soft pink tone, is now being distributed by Hadox Corporation. It is a creation of Miss Hazel Bishop (no longer connected with Hazel Bishop, Inc.), president of H. G. B. Laboratories. According to the manufacturer, this liquid soap sachet whitens white, brightens colors, has antiseptic action, and will soften hands as well as clothes. It is packaged in a gaily decorated polyethylene bottle with a convenient flip up-flip down top.

#### 6. PARK & TILFORD

A vibrant, all gold effect distinguishes the Tilford Stay Put Hairspray introduced by Park & Tilford. To achieve this effect, Donrico, the designer, used a combination of Shimmerglo(R), as well as 2 color foil printing for the label. The printing is confined to an oval label in a white reverse panel on which the gleaming natural foil comes through. Black type surprinted on the white medallion identifies the product. The rest of the area is in brushed Shimmerglo. A gold ribbed cap completes the ensemble.

#### 7. HELENE PESSL

This month Helene Pessl presents a special introductory offer to stimulate sales, its new Little Lady beauty set. A 4 oz. bottle of silicone hand lotion with dispenser, plus a new "Lip Treat", that protects a little girl's lips against the drying of wind and weather, have been combined in this set. "Lip Treat," a new lip balm, comes in four flavors, strawberry, cherry, vanilla, and lime. Attractively gift packaged, this regular \$1.35 value is available for \$1.00 plus tax, for a limited time only.

#### 8. LENTHERIC

Kings Men creates a striking, streamlined look in men's toiletries with the presentation of a newly-designed flagon available in both the Gold and Crystal lines. It was introduced in the holiday line and has become a Kings Men standard. This flagon reveals a new contemporary influence in its contours but retains the knight's helmet cap that has become a Kings Men trademark. The flagon is longer and narrower. The label has been redesigned also. It is now round and is emphasized by a slightly indented border.





7.



4.



5.



8.



# Suide to

# AEROSOL **PACKERS**



EAST

#### **ARMSTRONG LABORATORIES**

Custom, contract and private label fillers of metal, glass and plastic aerosol containers.

#### ARMSTRONG LABORATORIES

421 La Grange Street

West Roxbury, Boston 32, Mass. Tel. Fairview 3-7404

#### SUN-LAC INC.

"Successful through Service" 274 LAFAYETTE ST., NEWARK 5, N. J.

#### **Aerosol Packaging** Small Runs Solicited on . . .

Cosmetics, Creams, Foams, Perfumes, Powders, Household Items, Insecticides, Industrial Products, & Piastic Sprays.

We formulate and develop new products. Quality controlled productions—bulk sterage facilities, pressure & "Cold Fill" facilities. Special plan for companies requiring na-tional distribution. We supply samples and do experimental work at no charge. Write or phone MA 3-7727 for full information.

Powders-Liquids-Emulsions

EAST

#### AEROSOL FILLING

for Contract and Private Label Marketers

Also Liquid Filling

Complete Research and Laboratory Facilities Constant Quality Control

Norristown, Pa.

BRoadway 5-4355

## **Aerosol Packaging**

Here you will find the answer to your aerosol packaging problems . . . whether you need cold or pressure filling of foams, liquids or gels. You name the product and the container and we are equipped to fill it for you.

EAST



MT. PROSPECT & VERONA AVES NEWARK, N. J. . HUMBOLDT 4-2121 NYC WORTH 4-7870

MID-WEST



Symbol of Experience in Aerosol Development & Packaging

for Aerosol "Know-How" Call CONTINENTAL FILLING CORPORATION

123 N. Hazel . Danville, Illinois

# IMAGINATION . CREATION . REALIZATION



#### **AEROSOL TECHNIQUES** INCORPORATED

Exclusively private label manufacturer of perosal cosmetics, pharma-ceuticals and chemical specialties.

Bridgeport 5, Conn.

EDison 6-0176

#### SUBSCRIPTION ORDER FORM

**AMERICAN** PERFUMER

& AROMATICS

48 W. 38th St.

New York 18 N. Y. Enter my subscription to

AMERICAN PERFUMER & AROMATICS for one year at \$5.00

Payment Enclosed Bill Me Later

COMPANY .....

CITY .....ZONE ... STATE ..

# Aerosol News

#### Aerosol Newsletter

The first newsletter to be distributed by an aerosol filler, called "Pressure Gauge" has been distributed by Aerosol Techniques, Inc., Bridgeport 5, Conn. It includes news and developments in the field and also contains a technical bulletin the first of which deals with pressurized nitrogen aerosols. The first issue is chatty, newsy and informative and well worth writing for. A copy will be sent on request. According to H. R. Shepherd, president of the company. Pressure Gauge will be issued period-

#### **ICC Regulations**

Interstate Commerce Commission regulations as they apply to aerosol have been summarized in chart form by Pennsalt Chemical Corp., Philadelphia,

#### **New Propellent-Soluble Fragrances**

The new series of propellent-soluble fragrances developed by van Ameringen-Haebler Inc. overcome a number of problems which have confronted aerosol producers. Among these has been the tendency of resinous constituents in some fragrances to settle out and impair valve action. Moreover, certain types of fragrances are incompatible with fluorinated hydrocarbon propellents and unstable in terms of aromatic quality. The new fra-grances are reported to have none of these shortcomings and hence permit the perfumer to include in his compositions such normally insoluble ingredients as benzoin, oak moss, tolu, tonka, mace, myrrh, styrax and fir balsam.

Aerosol products in which the alcohol content is low or is considered undesirable are promising fields of application for the new fragrances. For example, aerosol sachet perfumes. Other products in which the new materials will find use include alcohol free hair lacquers and a number of pharmaceutical aerosols in which the use of alcohol is undesirable such as topical burn remedies, anaesthetics, antibiotics, bandage sprays and in-

#### Hair Mist Introduced in Australia

One of the newest products in Australia's booming aerosol market is Cyclax Mist, a lanolized hair spray. It comes in a 41/2 oz. container and is the first hair lacquer packaged in Australia to use Risdon's patented "Micro-Mist" mechanical break up actuator. The valve and actuator are made by National Radiators Ltd. of Port Melbourne, Australia, a Risdon licensee. The container is made by Containers, Ltd. of Melbourne.

#### Dr. Donovan Kvalnes Advanced

Dr. Donovan E. Kvalnes, technical manager of DuPont's Freon Products division is now also manager of the division's sales development dept.

#### Powr-Pak Inc. in New Quarters

Powr-Pak Inc. moved into its newly acquired quarters at 145 Howard Ave., Bridgeport, Conn., January 2. The new quarters afford 110,000 sq. ft. of space Four production lines will give the company a daily production of 350,000 aerosols it reports.

#### Black Made Engineering Director

Robert N. Black has been made director of engineering of G. Barr & Co. and will direct operations of the company in Chicago, New York, Los Angeles.

#### CSMA to Send Lodes to Europe

Recently there have been developments in Europe of trade association movements that may prove of interest to the various CSMA divisions, especially in the field of aerosols. Fully cognizant of these movements and the possibility of CSMA consideration, much discussion and review of this matter took place at the 44th Annual Meeting of the Chemical Specialties Manufacturers Association in Florida from December 9 to

At the Aerosol Administrative Committee meeting, after discussion and evaluation of the subject matter, it was resolved to observe the trade association movements in Europe covering industries of common interest to the CSMA and recommend a course of cooperative action between those associations and the CSMA.

In this interest, a Special Committee was appointed by the Board of Governors to make specific recommendations of procedure. The special committee discussed and recommended that a representative of the CSMA go to Europe and observe these trade activities in the various fields. After these observations, a review of the general situation is to be presented to the Board of Governors for their action.

Frederick G. Lodes of Lodes Aerosol Consultants, Inc. was unanimously chosen to represent the CSMA and observe the trade developments in Europe. Mr. Lodes has been very close to the growth of the aerosol program in Europe since its inception and has made repeated trips to Europe since 1952 in the interest of the aerosol industry. Mr. Lodes is likewise active in the Aerosol Division of the CSMA and is also a member of the Board of Governors.

As requested by the Special Committee, the general membership of the CSMA will be informed of this action. Mr. Lodes will go to Europe in the near future, as son as the necessary detailed preparations can be made for the proper review of this matter. It is hoped that the information in detail and recommendations can be obtained and presented to the Board of Governors in time for the next CSMA meeting.



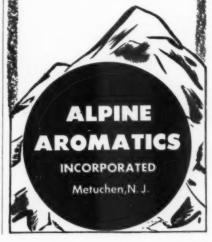
# **AMYRIS ACETATE**

**OUR OWN MANUFACTURE** 

> SWEETER RICHER FRESHER THAN AMYRIS.



Another Fine Product of Alpine Research.





## **PRODUCTS & IDEAS**

#### PLASTIC TUBE BRACKET-1

A handy device for dispensing consumer products from plastic tubes is the (Type T-1) Plastic Tube Wall Bracket developed by the Sugar Beet Products Co. The device utilizes the Bracon polyethylene tube as an integral part of its design. The pressure on the Bracon tube creates vacuum inside which sucks the product back into the tube, keeping the opening clean at all times. The bracket is molded from rigid polyethylene which is tough and inert to most chemicals. In use, the dispenser is simply screwed into the threaded opening in an "upside down position." A squeeze of the tube gives controlled dispensing of the desired quantity.

#### **AEROSOL VALVE**

A development which opens the way to such new aerosol products as liquid stream dispensers, drop dispensers and inert spray dispensers has been announced by Powr-Pak, Inc. This development is a new dispenser valve that makes possible the use of inert gas for propulsion. With the advent of inert propulsion gases which do not combine chemically with the contents, a number of new aerosol products should appeur.

#### CORROSION INHIBITOR

Beacon Chemical Industries, Inc., has introduced a new corrosion inhibitor, Triethylammonium Phosphate 802, suggested as an additive in closed systems where water, glycerine, alcohol, or glycol are used, and particularly when stored in combinations of other materials in tin-plated and steel containers where longer storage life is desir-

#### VINYL COATING-2

Amercoat No. 33, a corrosionresistant coating based on Bakelite vinyl resins and formulated by Amercoat Corp., has lasted more than three times as long as conventional coatings on these ammonium hydroxide storage tanks, according to the Davison Chemical Co. This coating reportedly shows excellent resistance to acids, alkalies, oils, weathering and abrasion, and is resistant to cracking and chipping. The inherent flexibility of the coatings allows for expansion and contraction of the metal tanks with changes in temperature. The tanks were first sandblasted for proper preparation of the surface. A white top coat was used to reflect the sun's rays. The first coat

was applied by brush and three additional spray coats were applied to give a total film thickness of .006 to .008 of an inch. Extra coats were applied to welds, corners and rough areas to make sure of thorough coverage.

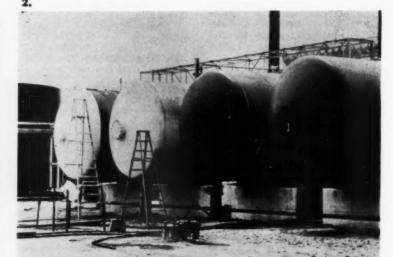
#### METALIZED POLYESTER FILM

A new heat-sealable polyester film that looks like aluminum foil but can be flexed almost indefinitely without affecting film properties has been announced by Minnesota Mining and Manufacturing Co. A metalized version of the firm's "Scotchpak" brand heat-sealable polyester film, it is designed specifically for packaging applications where both low water vapor and gas permeability and appearance are important factors.

The two-mil caliper film is especially suited for packaging materials which must retain volatile elements during storage periods. It has a water vapor permeability of .02 gms/100 sq. in/24 hrs. Air permeability is .2 cc/100 sq. in/24 hrs, and oxygen permeability is .6 cc/100 sq. in/24 hrs. According to the manufacturer the film retains its properties in a temperature range of -70°F to 230°F, and displays excellent heat reflectivity with very low heat conductivity.









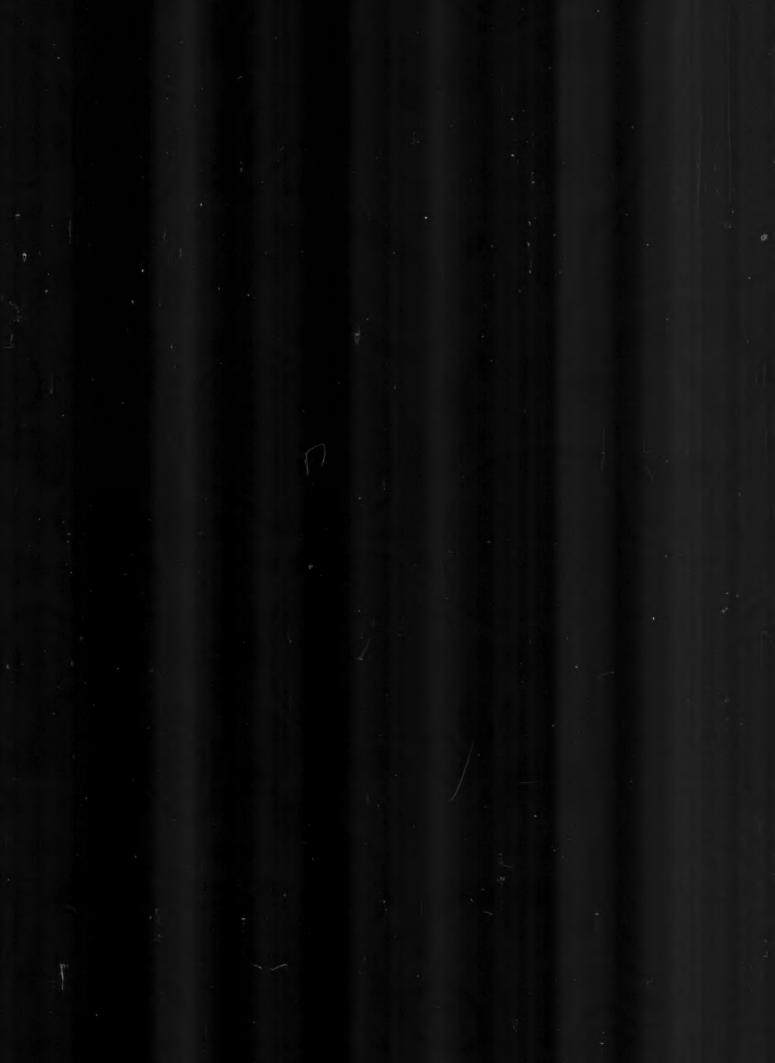


Capturing the spirit and vitality of Springof Nature's awakening from her long slumber to begin an exciting new cycle of growthhas been a favorite theme of poetry and prose, music and art, since time immemorial. Today, our perfumers are joining the procession of creative artists who find inspiration in the eternal freshness and beauty that characterize this happy season. In SPRING IDYL, we offer the manufacturers of perfumes and toiletries a wonderful medley of delightful scents, harmoniously composed to produce a well rounded, beautifully balanced blend of jasmine, rose and lily, modified with honeysuckle, violet and an ever-so-light touch of citrus aldehyde. Its foundation noteswood-like and mossy-are calculated to assure this composition's long-lasting beauty. . . . Medium priced, SPRING IDYL provides an excellent base for attractive floral extracts and colognes, as well as for various aerosol applications. At 21/2% strength, it produces an exquisite aerosol cologne, while a conventional type cologne can be made with a 4 oz. oil concentration. We commend SPRING IDYL as a most promising fragrance for springtime promotion. Testing samples are available upon request.

#### BROTHERS, INC.

76 NINTH AVENUE, NEW YORK 11, N.Y.

BRANCH OFFICES AND "STOCKS: ATLANTA, GA., BOSTON, MASS.,
"CMICAGO, ILL. CINCINNATI, OHIO, "LOS ANGELES, CAL.,
FHILADELPHIA, PA., SAN FRANCISCO, CAL., ST. LOUIS, MO.,
MONTREAL AND "TORONTO, CANADA, AND "MEXICO, B, F,
FACTORY, CLIFTON, N. J.





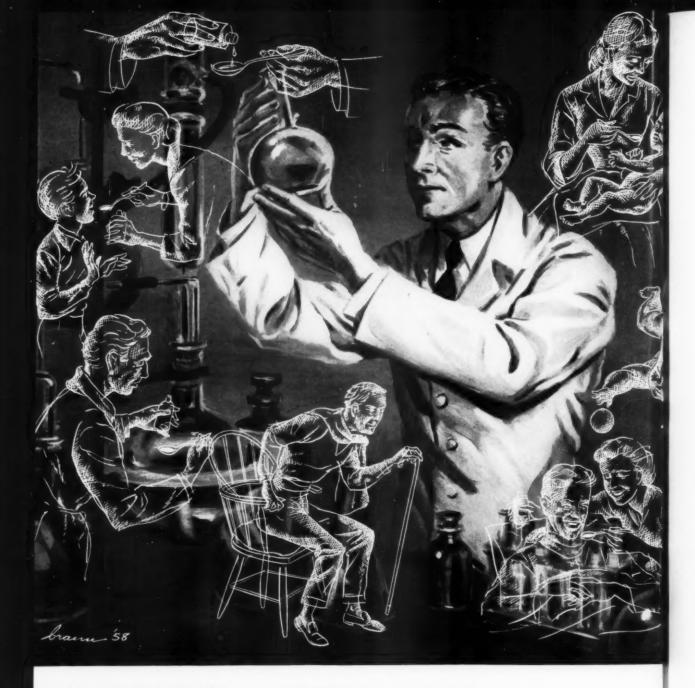
BRINGING YOU

A CAPTIVATING NEW

FRITZSCHE "EXCLUSIVE"

—A SPECIAL FRAGRANCE

FOR SPRING....



## LIFETIME RESPONSIBILITY . . . FROM BABYHOOD TO OLD AGE

In science, research and manufacture, the pharmaceutical industry's responsibility for our nation's well-being begins with each individual's birth and continues on through old age. Medicine's increasing contribution to longevity is recognized, today, as one of the great achievements of our time. Aiding and abetting the science of medicine is the science of flavoring and its relation to both the physiological and psychological aspects of palatability and taste. In this field of

## BROTHERS, INC.

76 NINTH AVENUE, NEW YORK 11, N.Y.

BRANCH OFFICES AND "STOCKS: ATLANTA, GA., BOSTON, MASS...
"CHICAGO. ILL.. CINCINNATI, OHIO, "LOS ANGELES, CAL...
PHILADELPHIA, PA., SAN FRANCISCO, CAL., ST. LOUIS, MO...
MONTREAL AND "TORONTO, CANADA, AND "MEXICO, D. F.
FACTORY: CLIFTON, N. J.

EST. 1871

specialization, our firm has delved long and deeply to provide practical solutions to some of the drug industry's most baffling problems. It could be that the same skills and experience that have made such solutions possible may also provide the key—both flavorwise and saleswise—to your medicinal product's improvement. Why not consult us—in confidence—and without obligation.

# News

## and Events

## Charles Pennock Appointed President of Ciro

Charles A. Pennock has been appointed president of the Parfums Ciro Division of Warner-Lambert Pharma-



Charles A. Pennock

ceutical Co. by Alfred E. Driscoll, president of the parent firm.

In making the appointment, Mr. Driscoll also announced the election of Mr. Pennock to the chairmanship of the board of Richard Hudnut, another cosmetic division of Warner-Lambert.

## Industrial Speed-Up Forecast At Chemical Exposition

Forecasts of a nation-wide industrial speed-up were disclosed at the 26th Exposition of Chemical Industries in New York recently.

The Exposition was the largest in the 42-year history of the institution and also the heaviest so far held in the New York Coliseum. Material for the more than 600 exhibits occupied all four floors of the great new arena with an area of 300,000 sq. feet and weighed close to 1400 tons.

## New Comb 'N Jet Applicator Offer by Lambert-Hudnut

Lambert-Hudnut div. of Warner-Lambert Pharmaceutical Co. is offering to its retailers for a limited time a unique comb in jet applicator free with a \$2\$ two-wave size of Richard Hudnut Quick home permanent. The applicator combines an interchangeable comb head and jet nozzle to make direct application on the hair exactly where needed and to assure complete saturation of waving lotion and neutralizer.

## Daughter of Francois Goby Married in Grasse, France

Miss Francoise Goby, daughter of Francois Goby, director of Tombarel Freres, Grasse, France and Mrs. Goby, was married December 28 to Etienne Marquand in the cathedral of Grasse.

## Vincent DeFeo in Argentina for Dodge & Olcott Inc.

Vincent DeFeo, treasurer of the New York Chapter of the Society of Cosmetic Chemists and head of the aerosol testing laboratory of Dodge & Olcott, Inc. is in Buenos Aires, Argentina, S. A. where he will remain for several months on behalf of his company.

## St. Johns Cosmetic Seminars to start in March in Brooklyn

The second series of cosmetic chemistry seminars of St. Johns College of Pharmacy Alumni Assn. is to start in March. James Murray, Irving Schlakman, Sabbat Strianse and Walter Wynne are on the Industry Advisory Committee.

## Anne Paree of Paris Launches Very Special Fragrance in U. S.

Anne Paree, whose real name is Anne Rousseau, head of Societe des Parfums Anne Paree, Paris, France, came to the United States in November to introduce a new perfume named "Very Special." The new perfume created by her comes in four sizes: purse size retailing at \$10; 1/2 oz. retailing at \$17; one ounce retailing at \$30 and two ounce retailing at \$55. Each is accompanied by its own atomizer. Distribution will be through selected outlets and already several have been opened in Chicago and in New York. Miss Rousseau spent several weeks in the United States studying American marketing methods before returning to France December 18. American offices are located at 550 Fifth avenue, New York.

## John Garizio of Reheis Co. Shoots Big Buck in Maine

John Garizio, of the Reheis Co. Inc., Berkeley Heights, N. J., on a recent hunting trip in the St. Pomphile section of Maine, downed a nine-point buck that dressed out at 202 pounds. The deer was big enough to get Mr. Garizio into the select "Big Bucks in Maine Club."

## Seventeen to Feature Hairdo of the Month

In response to an increasing number of reader requests for hair-styling information, Seventeen Magazine has inaugurated a regular "Hairdo of the Month" feature. The monthly columns will be devoted to styling, cutting and setting instructions for hairdos designed for different facial contours, types and lengths of hair, and other special situations

## Fritzsche Publishes Library Bulletin

The first issue of The Fritzsche Library Bulletin was published in November. Its heading describes the bulletin as "A monthly check-list of Current Literature covering Research on Essential Oils. Aromatic Chemicals, Perfume and Flavor Raw Materials, and their Application in Industry, with a special section on Organoleptic Problems and Procedures.

## Net Sales of Bourjois Inc. Up 11% for Six Months Period

Net sales of Bourjois Inc. for the six months period ended October 31, 1957 were up 11% and net profits before income taxes totalled \$1,269,000 for an increase of 24% over the corresponding period in 1956, according to the report of President Lewis F. Bonham.

## Van Ameringen-Haebler Develops "Dry" Aerosol Fragrances

"Dry" aerosol sachets, which contain little or no alcohol, can be formulated with a new series of fragrances developed by van Ameringen-Haebler, Inc. In the past, aerosol sachets have had a limited use for spraying clothing and linens in



drawers because their alcohol content could mar varnish and shellac finishes. VAH researchers expect that the new fragrances will also find use in alcoholfree hair lacquers and in pharmaceutical aerosols in which the use of alcohol is undesirable, such as tropical burn remedies, anaesthetics, antibiotics, bandage sprays and inhalants.

rins

rec-

e of

of

ply

rug

hat

uch

oth

od-

on-

## Dodge & Olcott Develops Spray-Dried Perfumes

As a result of new techniques in spray drying and formulation developed in the D&O Product Development Laboratories, practical locked-in-perfumes are now available for commercial use. According to the manufacturer these new materials, christened "Fragrance-Seal" by D&O, have indefinite shelf-life, are easy to handle, economical, and truly representative of the liquid perfume used in their manufacture. Fragrance-Seal, spray-dried perfumes are of particular interest in chlorinated cleansers where, unlike most liquid perfumes, they do not react with the free chlorine.

## Houbigant Sales Corp. Acquires Jacquet Line

Pierre Harang, vice president and director of Houbigant Sales Corp. announced recently the Houbigant has acquired Jaquet, fine cosmetic treatment line of French origin. Mr. Harang said that Houbigant plans no change in the personality and policy of Jaquet, whose operation will continue to be directed by Ralph Lewis as president and general manager of a separate corporate division.

## 31st Annual AASGP Convention Coming Up

The Assn. of American Soap & Glycerine Producers will hold their 31st Annual Convention January 22 thru 24 at the Waldorf-Astoria Hotel in New York City. The three-day program will feature the Acceleration of Change with leading authorities discussing the effects of these changes to the industry.

## Kolar Buys Two Modern Buildings

Kolar Laboratories, Inc., has recently purchased two modern buildings which provide a total floor space of 137,000 square feet. The building pictured is located in Chicago.

The history of Kolar's business over



the past 48 years has been one of steady and expanding growth. It manufacturers no products of its own but it does handle the manufacturing, packaging and distribution of many nationally known cosmetic and toiletry items.

## British S.C.C. Holds Second Meeting of Session

At the second scientific meeting of the Session, the President, J. Pickthall, F.R.I.C., introduced Mrs. D. L. Wedderburn, B.Sc., who presented a paper on "The Preservation of Toilet Preparations containing Non-ionic Surface-active

Agents."

The lecture, illustrated by slides, embodied the results of investigations upon different types of non-ionic surface-active agents in conjunction with 24 different preservatives. The activity of many well known and commonly used preservatives is reduced in the presence of non-ionic surface-active agents and it is concluded that all products containing these agents require specially selected preservatives depending upon the type and amount of non-ionics present.

Most of the observations carried out related to bacteria rather than to fungi because the activity of bacteria can be assessed by a numerical count. Both Gram positive and Gram negative bacteria were studied. Spoilage by bacterial growth is no less important than spoilage by fungoid growth and is much more important with regard to safety in use. Bacterial growth may induce changes such as liquefaction, separation and grouping together of solid particles which may be wrongly assumed to be due to faulty formulation of the product before odour reveals the origin of the trouble.

Apart from the inactivation produced by non-ionic surface-active agents other factors governing the selection of a suitable preservative are:—the pH of the product, the type of emulsion or system to be preserved, the nature of the pack or container in which the product is to be sold and the stability, toxicity and cost of the preservative.

The Third Scientific Meeting of the Session will be held at the Royal Society of Arts, John Adam Street, W.C.2. at 7:30 p.m. on Wednesday, 18th December, when Dr. R. H. Marriott, F.R.I.C., will present the subject "The Penetration of Skin—Dead and Alive."

## ANNUAL CHRISTMAS LUNCHEON OF COSMETIC CAREER WOMEN



Seated on Dais, left to right: Helen Jamason of Good Housekeeping; Norma Craig of McCalls; Bernice Connor, Director of Editorial Promotion, Ladies' Home Journal, speaker of the day; Eve Hendriksen, Gigante Paper Box Corp., chairman of the day; Carolyn Hyde, Beauty Fashion; June Clark, Mademoiselle; standing, left to right: Florence Deaney and Lucile Kirk, both of Parents' Magazine; Grace Hufner of Fawcett Women's Group; Ruth Drake of Redbook and Rita Caron, publisher of Prestige Magazine of Canada. Members and guests brought over 250 Christmas gifts which were given to St. Anthony of Padua Mission School, Bronx, N. Y. Gaily decorated crates in the back for shipping the gifts were through the courtesy of Firmenich & Co.



TO ACHIEVE THE OUTSTANDING IN NEW FRAGRANCES FOR YOUR



Look to the name that has been outstanding in the achievements of perfume history. As exclusive American representatives of

> TOMBAREL FRERES, S. A., Grasse, France (1837 - 1957)

We can give your products what it takes to reach new highs in consumer favor.

Put your fragrance problems up to us.

**Absolute Supreme Flower Essences** Surfine Essential Oils Resinoids mbaret

725 BROADWAY, NEW YORK 3, N.Y.

CHICAGO - A. C. DRURY & CO., Inc., 219 East North Water Street



Retiring CCA President Harry F. Taylor congratulates Donald A. Breyer, elected for 1958, following installation.



OFFICERS INDUCTED AT CCA'S 25th INSTALLATION

(From left) 2nd Vice Pres. C. Ray Sanders, Rexall Drug Co.; 1st Vice Pres. Paul Klein, Paul Klein Industries, Inc.; Pres. Donald A. Breyer, Anatole Robbins, Inc.; Secretary Mrs. Gail Engel, Beauty Creators; Treasurer Don G. Edmonston, Colonial Dames, Inc.

## California Cosmetic Assn. Celebrates 25th Anniversary

California Cosmetic Association climaxed its twenty-fifth year of service to the industry in the Golden State with an anniversary banquet held recently in the Beverly Hills Hotel. Some 300 members and guests were welcomed for the celebration by retiring President Harry F. Taylor.

Program Chairman William H. Nenstiel of Robert Gair Co., in a brief keynote statement, pointed out that while "25 Years of Progress" was neither an original or unusual theme for the event, it certainly held a depth of meaning "when we think back 25 years to the night when 13 men and women met in the assembly room of the Hollywood Chamber of Commerce to form the first trade association of our industry in California." Mr. Nenstiel went on to say ... "That number ... Thirteen' ... has not been unlucky for us when we realize the accomplishments of CCA throughout the intervening years, and its constantly increasing importance to our industry here." Mr. Nenstiel further stated . . . "The most conclusive evidence as to the value of our organization lies in the fact that 100 manufacturing and supplier firms are now active members, with a total of 150 representatives of those companies participating in our activities . . . that is the highest member-



FIVE OF CCA'S PAST PRESIDENTS HONORED

(From left) Alan J. Coghlan, Nethercutt Laboratories; John Danley, Merle Norman Cosmetics; J. A. Taylor, Nethercutt Laboratories; Marie V. Carroll, CCA Executive Secretary; Merton W. Taylor, Avon Products, Inc.; Arnold L. Lewis, Studio Cosmetic Co.

ship record ever attained by the association, and speaks for itself when you consider we are still a comparatively small industry in California."

While honoring its past presidents, CCA chose this occasion to also pay tribute to its supplier members with the presentation of commemorative awards.

Installation of the association's new officers took place during the banquet with John Danley of Merle Norman Cosmetics conducting the ceremony. Donald A. Breyer of Anatole Robbins, Inc. received the president's gavel and

inducted with him were First Vice President Paul Klein, Paul Klein Industries, Inc.; Second Vice President C. Ray Sanders, Rexall Drug Co.; Secretary Mrs. Gail B. Engel, Beauty Creators; and Treasurer Don G. Edmonston, Colonial Dames, Inc.

Members elected to serve on the Board of Directors include Davis Factor, Dr. Paul Jewel, E. M. Stolaroff, A. J. Coghlan, John Danley, Arnold L. Lewis, Harry F. Taylor, Henry R. Herold, C. R. Clapp, Clinton Booth and Honorary Director James Turner.





## George Wason Honored at Givaudan Christmas Party

The Swiss Chalet, Rochelle Park, N.J., was the scene of the annual Christmas Party of The Givaudan Corporation held on Saturday, December 14, 1957. During the affair, which attended by approximately three hundred and fifty of the firm's employees, Mr. George Wason, who had completed his twenty-fifth year

with the company, was honored and presented with a gold Swiss watch. The addition of one new member brought the group of quarter-century veterans to a total of sixty-six.

After the traditionally excellent steak dinner, the gathering was addressed by E. R. Durrer, president, H. F. Duffy, treasurer and Dr. Max Luthy, vice president in charge of production and research.

## Synthetic Geraniol Developed by Glidden

Commercial availability of synthetic geraniol has been announced by Dr. W. David Stallcup, vice president in charge of the Glidden Company's Southern Chemical Division.

The outstanding importance of this scientific and technological achievement will be evident to perfumers everywhere since it represents a milestone in the long history of aromatic chemical production. Economic synthesis of geraniol is the first announced result of a research program initiated twelve years ago to provide a range of terpene alcohols and related aromatics of extreme purity. at stable prices and in plentiful supply. According to Dr. Stallcup, these products, of which geraniol is an example, are synthesized from turpentine by entirely new methods developed in Glidden's research laboratories. For the first time, geraniol is made available in the United States from raw materials entirely of domestic origin and not subject to quality vagaries due to soil, climate and locale. The new route to geraniol moreover assures consumers of supply regularity, price stability and material uniformity.

Geraniol Standard is now available in quantity. This product is of extremely high quality, having a minimum total alcohol content of 98%. While containing the alcohols associated with the product derived from citronella oil, it is free from terpenes and sequiterpenes. It is confidently expected that this geraniol will be used as a direct replacement of high quality geraniol produced from citronella oil. Geraniol Standard is readily available to consumers at competitive prices.

The Glidden Co., furthermore, announces an arrangement with A. Boake, Roberts & Co. Ltd., of London, England,

to manufacture geraniol in Europe. The wide experience of ABRAC—A. Boake, Roberts & Co. Ltd.—in the perfumery field has been drawn upon in establishing the olfactory standard required by the soap and perfumery industries, and the same close collaboration in the development of new aromatic products is envisaged.

Detailed information concerning Geraniol Standard may be obtained by writing The Glidden Co., Southern Chemical Division, Box 389, Jacksonville 1, Florida.

## Fellowship Established By Chas. Pfizer & Co.

A \$5,000 dollar fellowship, part of a million dollar grant-in-aid program for education and independent research, has been established by Chas. Pfizer & Co., Inc., in the University of Rochester's Department of Chemistry.

## McNerney Products Corp. Announces New Location

The McNerney Products Corp. announces its new location at 5611 East Sheila St., Los Angeles 22, California, Telephone: RAymond 3-9557.

## TGA Issues Zinc Stearate Standard

The Board of Standards of the Toilet Goods Assn. has issued a standard for Zinc Stearate, reprinted in November, 1957.

## Tinkerbell Hosts Christmas Party

Hospitalized children in the Pediatric Ward of The Institute of Physical Medicine and Rehabilitation were the happy guests of Tinkerbell and a Magician on December 19th when the living counterpart of the beloved fairy creature of Peter Pan greeted them in a shimmery, glittering costume, complete with Tiara and Magic Wand. Tinkerbell miraculously produced, with a wave of her magic wand, prizes and gifts for each of the children, including children's books, records, candy, and Tinkerbell Toiletries. A magician performed for the children and Tinkerbell sang and danced.

## GEORGE FULLER INSPECTS RURAL STILL



Watching natives firing up a rural still at Socovos, Spain, preparatory to distilling five hundred kilos of plant material, was a high point in a recent tour of Europe of George Fuller of the Perfumery and Essential Oils Division of the Colgate-Palmolive Company to investigate perfume oils at the source to help establish uniform standards of quality.





Spencer E. Polmer

Dr. James E. Magoffin

David C. Williams

## Eastman Chemical Products Announces Advancements

The advancement of three officers and the election of two new vice-presidents by the board of directors of Eastman Chemical Products, Inc., were announced recently.

Effective January 1, 1958, Spencer E.

Palmer, a vice-president, moved up to first vice-president. The new officers are Dr. James E. Magoffin and David C. Williams, who were elected vice-presidents. Dr. Magoffin will be in charge of the chemicals division of Eastman Chemical Products, Inc., and Mr. Williams will head the plastics division, now under the direction of Mr. Palmer.

## POLAK'S FRUTAL WORKS SALES MEETING



photo courtesy of the Middletown, N.Y. Daily Record

## Polak's Frutal Works Annual Sales Meeting

Polak's Frutal Works, Inc., Middletown, N. Y., held their annual sales meeting from December 16th until December 19th. Participating in this meeting were all sales representatives from the United States, Canada and Japan.

Bernard Polak opened the meeting and spoke a few words of welcome. The three day meeting was taken up with discussions on new flavorings and perfumes, panel testing and panel discussions. A cocktail party and dinner held at the Orange County Golf Club concluded the meeting.

## Paisley Announces Managerial Changes

George J. Muller, president of Paisley Products, Inc., Division of Morningstar, Nichol, Inc., has announced the reorganization of Eastern Paisley Sales Management personnel to integrate the sales staff of the Federal Adhesives Corp., a recent acquisition.

The following Eastern Paisley sales management appointments become effective immediately: Federal's Philip M. Liner becomes Eastern Sales Manager. H. R. Callahan assumes the new post of Administrative Sales Manager. Arthur Mayer has been appointed Manager of Special Products Department. Mortimer E. Stern becomes Director of Technical Market Development. Edward Bearman, until recently Chief Chemist, assumes the post of Manager, Adhesive Development Laboratory. I. G. Nichol, Paisley's Assistant Sales Manager, assumes new responsibility with direct supervision of the combined New York metropolitan area sales force. Samuel Tisser has been appointed Manager, Latex & Plastisol Department and Harold Stone retains his post as Manager, Adex Manufacturing Div.

## Fragrance and Spray Patterns Tested by Special Blotters

The aerosol laboratories of Ungerer & Co. 161 Avenue of the Americas, New York, N. Y. have produced with the cooperation of Frank Orlandi convenient aerosol professional testing blotters which can be used to evaluate fragrances and to determine spray patters. The blotters come in a convenient booklet form and the most satisfactory way of using them is indicated in an illustration on the cover. For best results Ungerer & Co. recommends testing the odor evaluation at least one minute after spraying.

## Monroe-Danford Incorporates and Moves Offices

Monroe-Danford & Co. for the past two years a partnership has been incorporated. Donald M. Shaw is president and Maxwell D. Smart is secretarytreasurer. The company has moved its main office to 50 Forty-eighth St., Weehawken, N. J. Phone: UNion 6-1277.

## OBITUARY

### Ernest S. Vadasz

Ernst S. Vadasz, director of the Helena Rubinstein Australian Co., died recently in Zurich, Switzerland after a short illness.

Born in Hungary in 1899, Mr. Vadasz originated the Ritz Perfume Shops in Vienna, Austria. He was also a distributor in that country for American and British cosmetics manufacturers. In 1938 he moved to Sydney, Australia, to take charge of distribution for Helena Rubinstein Ltd., and later became a Director of the Australian Helena Rubinstein company. After World War II Mr. Vadasz founded Associated Beauty Aids Pty. Ltd. in Sydney, for the distribution of Helena Rubinstein products in both Australia and New Zealand. He was one of the foremost merchandising experts in the cosmetic industry.

He is survived by his widow, Maria Huppert Vadasz, and a brother, Gustav Vadasz of Vienna, Austria.

### Ferdinand Weber

Ferdinand Weber, first vice president and treasurer of George Lueders & Co., died on December 23 at the age of 88. Mr. Weber joined Lueders in 1892 and was active up to the time of his death. He was past president of the Essential Oil Association and of the Vanilla Bean Association and a member of the Montauk Club in Brooklyn. He is survived by three sons, George, Frederick and Kurt, and four grandchildren.

## Alvah E. Davison

Alvah E. Davison retired president and general manager of the Bon Ami Co. manufacturers of cleansing powders, died December 14 in Port Chester, N.Y. at the age of 59 years. He joined the Bon Ami Co. in 1935 and served until his retirement in 1955. He is survived by his wife, a son and a daughter and two brothers. He lived in Rye, N.Y. and was a member of the Union League Club of New York



tical manufacturing experience of over 100 years' specialization in beeswax and beeswax compounds are at your service without cost or obligation. Write about your beeswax problems to

WILL & BAUMER CANDLE CO., INC.
Dept. AP, Syracuse, N.Y. • Established 1855

E:eached White Beeswax—Yellow Beeswax—Stearic Acid—
Spormaceti—Ceresine—Composition Waxes—Red Oil





- **EMULSIFIERS**
- DETERGENTS
- ABSORPTION BASES
- FRAGRANCES
- SCIENTIFICALLY DEVELOPED

  AND MANUFACTURED—

  SPECIFICALLY FOR APPLICATION

  IN COSMETIC FORMULATIONS







Diamond studded gold compacts to sell for \$75,000 each are to be offered by the Elgin-American div. of the Illinois Watch Case Co. to celebrate its 75th anniversary.

A new hospital wing specializing in dermatology in Israel is to receive the proceeds of the lectures by Lawrence Spivak well known TV personality.

A college education for employes of Helene Curtis Industries who care to take advantage of it has been made possible by the company which has provided factory classrooms and which will pay the tuition and cost of the books required.

Incidental and intentional additives to foods are to be treated in the same manner without distinction between them in a bill. H. R. 6747 sent to Congress by Marlin Folsom secretary of the Dept. of Health, Education and Welfare for consideration at the present session of Con-

Complete beauty service is to be offered by Slenderella International Salons, Stamford, Conn. in a chain of boutiques in the United States and abroad to be established at a cost of one million

Coca Cola Co. is suing Pepsi Cola Ltd. of England in the British courts for allegedly using bottles resembling those of Coca Cola. Coca Cola Co. claims that the same distinctive bottle, which enables the product to be immediately recognized, has been in use for 30 years.

Shick Inc., Lancaster, Pa. manufacturer of electric razors is offering an electric pre-shave lotion in a glass container of a convenient shape for consumer use.

To end bad breath and perspiration odors an unusual offer has been made to consumers by the Lavoris Co. and Associated Products Inc. makers of 5-day deodorant pads. The combination offer will be heavily advertised in network television during February and March. The consumer gets a free bottle of Lavoris mouth wash when she buys 5-day deodorant pads at the regular price. Both are packed in an attractive display using the colors of both packages.

Contributions to buy advertising in fashion and popular magazines to promote National Beauty Salon Week by active members of the National Beauty and Barber Manufacturers' Assn. are likely to be responsible for the filip given to the professional beauty salon service which will capitalize on the promotion February 9 to 15.

The four-day work week and the coming collective bargaining climate are to be debated at the American Manage-ment Assn's Mid-Winter Personnel conference in the Palmer House, Chicago, February 17, 18 and 19.

The luminous look in eye make-up which begins with a super smooth eye shadow in a new and easily applied stick form is the latest idea introduced by Coty Inc. The luminous look is a successor to the doe-eye which Coty launched in 1950 which proved to be very popular. The 'luminous look' is achieved by a delicate blend of soft color, misty "enlargement" of the eye and the accent of a penciled line. For the brows and for outlining lids Coty has produced an automatic eve cravon with a built in sharpener.

Girls under twenty are advised by Miss magazine in a recent issue, that perfume is correct at all times and should be worn daily as an adjunct to grooming. In a special feature story by Shery Stone of the Fragrance Foundation it is pointed out that fragrance is fun. Girls under 16 are advised to wear lighter scents at all times including the classroom reserving the perfume for special occasions like parties.

Executives traveling abroad are likely to find their paths smoothed by a unique VIP itinerary planning service available through Pegasus International Corp. It works this way: An American business man going abroad or a foreign executive coming to this country gets in touch with his local Pegasus office and discusses the purpose of the trip and the type of plants he would be interested in visiting. Pegasus then forwards this information to its appropriate branch office in the country he intends to visit. Before the visitor arrives his itinerary is fully prepared, appointments with executives of appropriate firms made, hotel reservations secured and if desired experienced interpreters are provided.

Full office facilities are provided as well as space for conferences, secretaries and every convenience of his own office are his for the asking. Even dictating machines are provided for use in a hotel room for after-hours dictation. The service is very flexible and provides securing theatre tickets, guides for shopping tours of wives of executives and other services to make the trip interesting, profitable

and enjoyable.





MODEL EBW PORTABLE FILTER - This filter is recommended for small capacity requirements. Accomodates from 4 to 8 124" dia. filter disks. Easy to set-up and operate.



Will rapidly fill small or batch lots of material at lowest cost. Fills bottles to uniform height without loss of material. Interchangeable spouts for filling shaker-type bottles to gallons.



Ertel Asbestos Filter Sheets for ultra polished brilliance are used for many fine perfumes and cosmetics. Available in 10 grades to fit all standard filters. Write regarding samples for superior result tests in your filter.

Write for Illustrated Catalog



### NEW MAX FACTOR MARKETING DIRECTOR



Alfred Firestein (third from left), a vice president and member of the board of directors of Max Factor & Co., who has just been appointed Director of the firm's U.S. Marketing, confers with other newly appointed directors of divisions under his jurisdiction, (I. to r.) Nelson Gross, director of U.S. advertising, Lee Rosene, director of U.S. sales, and Chester Firestein, director of U.S. merchandising.

## Canco-Marathon Merger Approved

Stockholders of American Can Co. and Marathon Corp. at special meetings Dec. 3 ratified the merger of the two companies. The American Can meeting also voted to increase Canco's authorized common stock from 15 million shares to 25 million shares, and elected five new directors to enlarge the company's board from 15 to 20 members. Part of

the newly authorized Canco stock is earmarked for the purchase of Marathon, a major producer of pulp, paper, paperboard and fabricated paper products. The merger agreement provides for an exchange of a maximum of 2,970,810 shares of Canco common for Marathon common in a ratio of eighttenths of a share of American Can for each share of Marathon. Canco will acquire all Marathon's assets and substitiories

## Max Factor Holds Annual Sales Meeting

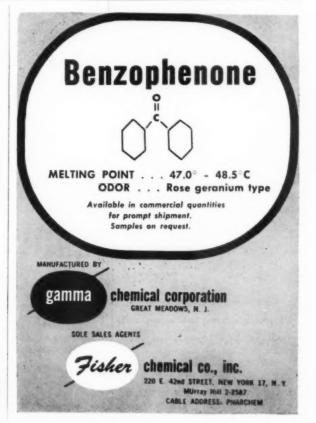
Culminating the biggest and most successful sales year in its 48 year history, Max Factor & Co. staged its annual sales meeting in Los Angeles last month, with more than 175 of the firm's sales representatives, traveling make-up artists, officers, directors, and other executives in attendance.

Presided over by Lee Rosene, it was the largest gathering of sales, advertising, and executive personnel ever to attend a Max Factor sales meeting. Participating with Rosene at the affair were the company's five sales managers: Ben Gilmore, Al Rubin, Herm Schnitz, Fred Hansen, and Sid Wallis.

### Ownership of Trademark "Tamed Iodine"

Inadvertently credit for the registered trade mark "Tamed Iodine" was omitted from the footnotes accompanying the article "Germicidal Detergent Compositions containing 'Tamed' Iodine" which appeared in the December issue of American Perfumer and Aromatics, page 37. The trade mark "Tamed Iodine" is owned by West Chemical Products Inc., 42-16 West St., Long Island City, N. Y. and was registered by it November 1, 1955, No. 615,063. We extend our apologies to West Chemical Products, Inc.





## Directory of ... COSMETIC MANU JFACTURERS

## Let us be your factory

Concentrate your effort on sales We do the manufacturing for you Bulk and complete packaging service

Cosmetries, Inc.



21 Irving Place

New York 3, N. Y.

## KOLMAR LABORATORIES

World's largest manufacturer of private label cosmetics with plants in Port Jervis, N.Y., Milwaukee, Wis., Los Angeles, Calif. Foreign plants to serve you in Canada, Mexico, Australia, England, France and Germany.

EXECUTIVE OFFICE

224 N. Broadway Milwaukee, Wisconsin

## KOLMAR COSMETIC SPECIALTIES

The complete package service for the smaller distributor.

PLANTS AT:

Port Jervis Milwaukee Los Angeles

OFFICES:

Empire State Bldg., N.Y. 224 N. Broadway Milwaukee, Wisconsin 1260-No. Western Ave. Los Angeles, Cal.

# $P \cdot L \cdot ($

manufacturers

of

Private Label Cosmetics

Co., Inc.

373 East 148 St., N.Y. 55, N.Y.

## PRIVATE LABEL FORMULATION CONTRACT PACKAGING

CREAMS . LOTIONS . POWDERS COLOGNES . PERFUMES . **DEODORANTS • PHARMACEUTICALS** 

We offer a complete manufacturing, filling and packaging service. Adequate warehouse facilities. Complete shipping service.



R. GESELL · INCOPPODATED

200 WEST HOUSTON ST. . NEW YORK 14, N.Y. **WATKINS 4-3870** 

American Perfumer, and you are moving, please let us know. Include your NEW and OLD address, and allow six weeks for the change. Address all subscription mail to:

## **AMERICAN PERFUMER &** AROMATICS

CIRCULATION DEPARTMENT 48 West 38th St. . New York 18

## Cosmetic Aerosols Win Top Honors-C. S. M. A. Meeting

Top honors in the 1957 aerosol packaging design contest sponsored by the Aerosol Division of the Chemical Specialties Manufacturers Assn. went to manufacturers of cosmetics. Two were tied for first place: "Five O'Clock Spray Perfumette" by Helena Rubinstein and "Stag" shaving cream by Rexall Drug Co.

More than 200 entries from all over the world competed for the aerosol industry's top packaging honors in ten product categories. In six of these categories manufacturers in the cosmetic field took first place. They were: Room deodorants, Adrienne Distributors; Shaving Products, Stag shaving cream, Rexall Drug Co.: Hair Preparations, Adorn hair spray, Toni Div., Gillette Co.; Other Personal Products, Mist of Beauty Body Lotion, Mayfield Laboratories; Medical and Pharmaceutical Products, Alco Mist body spray; Rexall Drug Co.; and Cosmetics, glass and plastic aerosols, Five O'Clock spray perfumette, Helena Rubin-

The announcement of the victors in the contest was greeted with interest at the meeting, which took place in Hollywood Beach, Florida, December 9-12. Two sessions of the Aerosol Division were held on Monday and one morning session on Tuesday, when the various committees of the division made reports. At the Tuesday and Wednesday sessions of the Division, technical papers on various phases of the industry were presented.

In his paper on Pharmaceutical Aerosols Dr. Martin Barr of the Philadelphia Collect of Pharmacy and Science stated that an analysis of the types of phar-maceuticals which may be used effec-tively as aerosol dosage forms in the near future revails a market of at least \$150,000,000. Another paper which created much interest was given by Thomas H. Reilly and Donald V. Brown of the General Electric Co. on "Silicones in Aerosols.

The newly elected president of the Chemical Specialties Manufacturers Assn. is James E. Ferris, Hooker Electrochemicals Co.

## **ACDI** of Missouri **Holds Annual Meeting**

The annual business meeting with the election of officers of the Associated Drug and Chemical Industries of Missouri, Inc. was held December 11. The association elected the following: President, El Ted Mann, The Dow Chemical Co.; 1st Vice-President, Leo G. Peck, Peck's Products Co.; 2nd Vice-President, Robert F. Walsh, Harry A. Baumstark & Co.; 3rd Vice-President, Robertson B. Clark, Mallinckrodt Chemical Works; Secretary, S. C. Gansner, Cole Chemical Co.: Treasurer, J. Louis Lanz, Albert Verley & Co.

Members of the Executive Committee elected were: E. E. Aldrich, Rexall Drug Co.; George W. Barth, Owens-Illinois Glass Co.; William Cappenter, Columbia-Southern Chemical Corp.; W. D. Vesey, Merck & Co., Inc.; Joseph C. Weiler, J. C. Weiler & Co.; Phil Yates,

Marvin Yates Co.



Geoffrey B. Smith has been appointed national sales manager of Helena Rubinstein, Inc., for both the United States

Eric N. Blackstead has been elected vice president of Sun Chemical Corp. and general manager of its chemicals Edward J. Newman has been promoted to eastern sales manager, according to a recent announcement made by



Geoffrey B. Smith

and Canada, according to Oscar Kolin, vice president.

Ashby E. Balden, vice president of the Aetna Insurance Group, has been elected president of the New York Board of Trade, Inc.

James Giddings has been appointed Southern Sales Manager of Knox Glass, Inc. it was anounced by Dr. A. W. Wishart, president of Knox Glass, Inc.

Dr. Philip L. Bowman has been elected president of Bristol Laboratories Inc.

Paul D. Blackman has organized Millot, Inc. for the American distribution of



Paul D. Blackman

the F. Millot fragrance line of which Crepe de Chine is the best known. The company will be wholly independent of the French company. He is president and James S. Potter Jr. is sales manager. Both were formerly with General Beauty Products, Inc.



Eric N. Blackstead

group, according to a recent announcement. Prior to his election as a vice president of Sun, Mr. Blackstead was vice president and general manager of Ansbacher-Siegle, manufacturer of U.S. Government Certified Colors for the drug and cosmetic industries.

Andrew A. Lynn formerly vice president in charge of sales for Revlon Inc. has joined Chesebrough-Ponds, New York as vice president in charge of marketing. He is also a director. His place at Revlon has been taken by C. R. Ruston.

Lee H. Bristol, former president of the Bristol-Myers Co. has been elected chairman of the board succeeding Henry P. Bristol who is continuing as chairman of the executive committee. Frederic N. Schwartz has been elected president and Robert B. Brown has been elected executive vice president of the company.

Allan R. Ritch, connected with Polak & Schwarz for the past 18 years in a sales capacity, retired at the end of 1957. All his friends and business associates wish him a very happy and pleasant retirement.

Charles Pisano, President of Citrus & Allied Essential Oils Co. has just returned from an extended trip to the firm's plantations in the Dominican Republic and Cuba. The purpose was to increase the production of Oil of Limes Distilled and Oil of Bitter Orange.

Ray Barbas of Patou of Paris is in the United States to help develop sales of the company's new perfume Lasso. His trip here was his 95th crossing of the Atlantic ocean.



Edward J. Newman

Raoul Pantaleoni, president of Alpine Aromatics, Inc. Mr. Newman, formerly with Johnson & Johnson, joined Alpine Aromatics, Inc. nearly two years ago. His new duties will include sales in both the industrial and cosmetic field.

Charles F. Junod has been elected vice president of Pacquin Inc., of which he is sales and advertising manager.

Edward P. Morrish has been elected vice president in charge of technical liaison for Firmenich Incorporated, New York, it was anounced by company president Charles C. Bryan.

Mr. Morrish has been technical director of Firmenich Incorporated for the



Edward P. Morrish

past ten years. His new capacity will permit broader technical liaison with the cosmetic and pharmaceutical industries. Prior to joining Firmenich, he was Chief of the Casmetic Section of O.P.A. in Washington, D.C., and has had extensive experience in the drug and cosmetic industry.

Miss Ainslee of Charles of the Ritz a noted expert on make-up will discuss the art of makeup and demonstrate on models at the February 4 meeting of Cosmetic Career Women on the Star-light Roof of the Waldorf Astoria hotel February 4.

Annette Green, who has been associated with Lentheric for the last seven years has been appointed director of publicity and promotion for the Lentheric division of Helene Curtis Indus-

Marshall S. Lachner has been elected president and chief executive officer of B. T. Babbitt Inc., New York, N. Y.

Dr. Glenn E. Ullyot, an associate director of research at Smith, Kline & French Laboratories, received the 1957 American Institute of Chemists' honor scroll award at a dinner meeting January 9 in Philadelphia, Pa.

Henry N. Calisher has been appointed to the position of assistant sales manager of Chanel, in replacement of Jerome L. Sullivan, according to a recent announcement by Dr. H. Gregory Thomas, president of Chanel. Mr. Calisher, who is well known to the retail trade in the Greater New York area, has been associated with Chanel for more than twenty years, having been the sales representa-tive in the Metropolitan New York area for some years.

Donald L. Averill has been named assistant manager of the Chicago sales office of Shulton, Inc. He had been a member of the sales organization since

J. P. Selvage of New York City, President of Selvage & Lee, Public Relation and Management Consulting Firm, has been elected Chairman of the Board and chief executive officer of Lanolin Plus, Inc. Dr. J. Schultz, President, has resigned and will announce his plans at a future date.

John H. McDonald has joined the technical staff of S. B. Penick & Co.

Nelson Gross has been appointed Director of United States Advertising for Max Factor & Co.

William M. Bristol, III, has been elected president of the Bristol-Myers Products Division of the Bristol-Myers Co., New York, N. Y. He has been with the company since 1946.

Henry A. Colgate who died recently left an estate of \$4,000,000.

John J. Toohy, general manager of the E. R. Squibb & Sons division of the Olin Mathieson Chemical Co. was recently presented with a testimonial scroll by his associates citing 35 years of service with the company.

Edward J. Breck, president of John H. Breck, Inc., has been selected by the Springfield Post, Jewish War Veterans for its 1957 Outstanding Citizen Award. The award, made each year to a citizen of greater Springfield, will be formally presented to Mr. Breck at a dinner to be held March 30th, 1958.

Victor G. Fourman was the recent guest lecturer of the Maryland Section of The American Chemical Society, where he spoke on "The World of Perfumes" at their annual dinner meeting.

Murray Spitzer has been added to the executive staff of the marketing and merchandising division of Helena Rubin-

Charles T. Lipscomb Jr. formerly president of the J. B. Williams Co. and the Pepsodent division of the Lever Bros. Co. will be the speaker at the Men's Day luncheon of the Cosmetic Career Women April 1.

Emanuel Goren has been made manager of the Lehn & Fink Division of the Lehn & Fink Products Corp.

Claude Bernheim, president of Schiaparelli, Inc., shortly after his return from Europe, was the guest of Al Davidson on the WABC Radio Program "The World of Fashion." Among the topics discussed were the different ways in which American and European women react to new fashions.

## Certified Cosmetic Colors

<del>999999999999999999999999999999999999</del>

Lipsticks

**Face Powders** 

Rouges **Lip Pomades**  Compacts

**Nall Polishes** 

**Purified Iron Oxides Purified Titanium Dioxide** for Drugs and Cosmetics

Let our modern scientific laboratories assist in your color problems.

Samples Cheerfully Submitted.

nsbacher -\_ CORPORATI

Manufacturers of Fine Colors

General Offices, Factory and Laboratories ROSEBANK, STATEN ISLAND, NEW YORK, N.Y.

Boston, Chicago, Cincinnati, Cleveland, Greenville, S.C., Los Angeles, Philadelphia, San Francisco

MYSORE SANDALWOOD



Genuine Mysore Sandalwood Oil, distilled at our Linden, N. J. plant, is the chosen standard of purest quality by all leading Perfumers.

W. J. BUSH & CO., Inc.

137 Boston Post Road, Cos Cob, Conn.

Tel. TOwnsend 9-8363 or dial WEstmore 7-3424





## Transportation Tied up - Sales Down

The transportation tieup which cut deeply into retail sales of toiletries and proprietaries in the New York area will in all probability adversely affect January sales of various oils, aromatic chemicals and other basic materials. The New York Metropolitan area accounts

for approximately 21 per cent of the country's year-end holiday sales at the retail level. San Francisco is second in place accounting for about 15 per cent. Retail sales gains in other cities were quite satisfactory in contrast to December a year ago.

## PRICE CHANGES

Advances	Current	Previous
Vanilla beans		
Bourbon	\$8.50	\$8.00
Mexican, whl beans	9.00	8.75
Mexican cuts	8.50	8.25
Copra, coast, ton	177.00	162.00
Palm oil, tanks	0.1260	0.1250
Oil, lime, distilled	6.50	5.80
Menthol, Japanese	7.25	7.10
Oil nutmeg, E.I.	13.50 Nom'l	13.00
Declines		
Oil citronella, Formosan	\$0.80	\$0.82
Tallow, fancy	0.081/4	0.08%
Grease, white	0.083/8	0.09
Oil rosewood (Bois de rose)	2.50	2.90
Oil cedarleaf	3.50	3.60
Oil palmarosa	5.50	6.00
Oil geranium, Bourbon	16.00	16.50
Oil ginger	14.75	16.00
Oil sandalwood, E.I.	11.75	12.50
Cocoa butter	0.93	0.96
Citral	3.85	4.30
(Prices per pound unless otherwise spec	cified)	

### SMALLER PACKAGE FOR LEMON OIL-

Co-distributors for Sunkist Growers have been advised that Exchange brands of Californian lemon oil will, in the future, be packed in a new and smaller container, a seven pound tin, for the convenience of consumers. The producers' two varieties of oil, Californian coldpressed Exchange Brand, and USP coldpressed lemon oil 413 will be available in the new container at 10 cents a pound above prices in effect on the regular 35 and 385 pound containers of \$4 a pound for the Exchange brand and \$3.75 for the 413 grade.

### FLORIDIAN ORANGE STRONGER-

The cold weather that hit the Florida citrus belt was immediately reflected in orange oil. Major suppliers immediately withdrew offerings of the oil pending more detailed reports on crop damage. Floridian orange oil had previously been the cheapest variety of orange oil on the market at prices ranging from 55 cents to 60 cents per pound.

### MINT OILS STEADY-

The appearance of oil from second cuttings and reports to the effect that the peppermint crop was heavy this year fail to have any influence on the longer term outlook which is regarded as strong. Trade observers fear the same firming influence that developed last year because of insufficient quantities of high test oil will again be repeated before another new crop period arrives. Consumption of both spearmint and peppermint has been steadily increasing.

## RENEWED STRENGTH IN NUTMEG-

Turn of events in Indonesia were immediately reflected in both nutmeg spice and the oil. It has been virtually impossible to obtain any spot lots of West Indian oil nutmeg for the past several months. Dealers who had previously been asking \$13 a pound for East Indian oil nutmeg, advanced prices to \$13.50 to \$13.60 a pound, and in some instances prices were marked up by 75 cents to a minimum of \$15.75 per pound.

### LIME OIL STRONG, ADVANCING-

Bullish reports from Mexico, together with prospects of an early resumption in buying for the account of the beverage trade, all point to a decidedly strong market in lime oil over the first quarter of the new year. Prices for distilled lime oil rose 25 cents to a minimum of \$6.50 a pound, with the overall position of the market suggesting further advances. Supply of prime quality lime oil is virtually exhausted in Mexico and it will be some time before new production gets underway.

### GLYCERIN SUPPLY LARGE-

While glycerin stocks have dropped about a million and a half pounds from a record high in recent years of seventy-three million pounds, the general tone of the market displayed an unsettled appearance especially in view of a sluggish demand over the final month of the year. Sales in the first nine months of the year ran about a million pounds per month over those in the corresponding period last year.

### CITRATES ACTIVE-

Considerable activity was noted in citrates over the final month of the year with inquiries indicating an immediate resumption in trade following a brief interruption in the first week of the new year. In addition to good sales of the soda, citric acid has been moving in exceptionally good volume espe:ially to the beverage trade.

## CITRONELLA OILS DECLINE-

Formosan citronella oil, which has been steadily losing ground for several months declined to a new low, the market reaching 80 to 85 cents per pound. The supply continues to run well ahead of demand. Trade observers point out that there does not appear to be any indication of an early reversal in the trend. Oil from Ceylon also displayed an easier trend.

### NEW CROP VANILLA SOLD AHEAD-

The vanilla bean market displays considerable strength as the result of a fairly heavy buying movement of new crop beans in Madagascar and reports from Mexico to the effect that the coming crop will be much smaller than last year. Based on estimates the Mexican crop will total between 75 and 100 tons in contrast to 150 tons last year. The spurt in activity in new crop Bourbon beans developed about three weeks ago with the result that more than half of the 400 tons expected from the new crop has already been sold. Spot prices for Bourbon beans have been moved up to \$8.50 to \$9 per pound. Whole Mexican beans have been advanced to \$9 to \$9.50 a pound.

## **Aromatic Chemicals**

FOR PERFUMERY AND FLAVORS

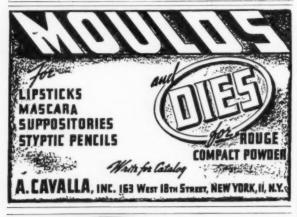
Iso Propyl Quinoline . Isobutyl Quinoline

Ethyl Anthranilate • Butyl Anthranilate

Linalyl Anthranilate • Linalyl Isobutyrate

# FAIRMOUNT

600 Ferry Street Newark 5, N. J.





## THEODOR LEONHARD WAX CO., INC.

HALEDON, PATERSON
NEW JERSEY
Western Distributer: A. C. Drury & Co., 219 E. North Water St., Chicage, III.

## WE BUY FOR CASH

CLOSE-OUTS . SURPLUS

Bottles • Caps • Jars • Containers • Chemicals • Closures
Cosmetics of any Descriptions

Also Business Small or Large . . .

## UNIVERSAL OUTLET CO.

1 E. 15th St. • New York 3, N.Y. Telephone Oregon 5-9444— Oregon 5-8568

1905

1958

# FIFTH AVENUE PROTECTIVE ASSOCIATION

A
NATIONALLY USED
COLLECTION AGENCY

covering the U.S. through its own personal representatives

142 Lexington Avenue New York 16, N. Y. (Our Own Building)



## ESSENTIAL OILS

Boisolene Jasmin de Provence B Muguet Isoflor A

## AROMATIC CHEMICALS

Cassie Isoflor Jasmin Fleurs D Rose d'Orient #1

Serving the Trade for 106 Years

## Honeysuckle #500

\* JONQUILLE ISOFLOR Tuberose Isoflor

## PERFUME SPECIALTIES

Jasmarome Lilas Isoflor B Violette de Provence

## \* JONQUILLE ISOFLOR

An excellent extender for the natural flower oil. Its refreshing green note gives lift and blends harmoniously with all types of floral odors.

160-5th Ave., New York 10, N. Y. • CHelsea 3-1937



## CLASSIFIED ADVERTISEMENTS

Rates per line, per insertion: Situations Wanted and Help Wanted, 50c. All other classifications, \$1.00. Please send check with copy.

### FOR SALE

FOR SALE: One year's supply of latest information on market prices, new formulations, sales promotion techniques. Delivered to you on regular monthly schedule. Total investment for 12 months: \$5.00. Potential return: Unlimited. Address: Circulation Dept., American Perfumer & Aromatics, 48 W. 38th St., New York 18, N. Y.

### HELP WANTED

PERFUMER—5 TO 10 YEARS EXPERIENCE ESSENTIAL OILS AND AROMATICS CHEMICAL INDUSTRY, INTERESTING WORK ON CUSTOMER PROBLEMS AND GENERAL PERFUMERY, METROPOLITAN LOCATION, OUR EMPLOYEES NOTIFIED, BOX 3167, AMERICAN PERFUMER AND AROMATICS, 48 W. 38TH ST., NEW YORK 18, N.Y.

### MISCELLANEOUS

FILTERING PACKAGING PROCESSING MACHINERY

new, used and rebuilt, bought, sold, exchanged, rented!

ACE PROCESSING EQUIPMENT CO. 6823 S. Kenwood, Chgo 37, Ill.

### SITUATION WANTED

WOULD LIKE TO CONTACT DISTRIBUTORS, ONE TO EACH STATE, TO HANDLE EXCLUSIVE FACIAL FORMULA, CREATED BY A PHYSICIAN. BOX #3154—AMERICAN PERFUMER & AROMATICS, 48 W. 38 ST., N.Y. 18, N.Y.

## DO YOU SPEACIALIZE



## IN TASTES OR SCENTS?

Then you should read every issue of American Perfumer and Aromatics! A year's subscription costs only \$5.00 . . . and you can order yours simply by sending us your name and address, along with your payment.

Order your subscription today!

**American Perfumer and Aromatics** 

.

48 W. 38th St. .

New York 18, N.Y.

## PROFESSIONAL SERVICE

"L'ART de la PARFUMERIE par EXCELLENCE" And its Application to the Industry

## DR. JEAN JACQUES MARTINAT

PERFUMER-CHEMIST CONSULTANT

Perfumes Cosmetics Toilet Articles Soaps Flavors

**Creations of Highly Original Perfumes Duplications of Most Difficult Fragrances** Unique Kind of Professional Services.

333 WEST 52ND STREET, NEW YORK 19, N. Y. TEL. PLAZA 7-3861

## Specialists in analysis

cosmetics, essential oils, drugs Ask for Estimates—Quotations—No obligation 29 West 15th St., New York 11 . . . WAtkins 4-8800

Seil, Putt & Rusby, Inc.

analytical, consulting, research chemists Established 1921

A DIVISION OF SNELL

### RESEARCH AND DEVELOPMENT

Cosmetic Formulation and Improvement

Toxicology, skin-irritation studies, analyses and formulations, soap and syndet evaluations. Free booklet: "How to Develop Successful New Cosmetics.'

SNELL

FOSTER D. SNELL, INC.

29 West 15th St., New York 11, N. Y.

WAtkins 4-8800



## LEBERCO LABORATORIES

Irritation Studies—Sensitivity Tests
Toxicity and Safety Tests on
Shampoes—Cold Wave Lotions—All Co
Pharmaceutical and Cosmetic Research
Hormone Assays—Bacteriological Studies

ROSELLE PARK, N. J. 127 HAWTHORNE ST.,



### Carl N. Andersen, PhD Consulting Chemist

Cosmetics, Soaps and Synthetic Detergents OFFICE AND LABORATORY

150 South Highland Avenue, Ossining, N.Y. Phones: Wilson 1-1550; Wilson 1-7959

# Index of ADVERTISERS

Aerosol Techniques, Inc. Alpine Aromatics, Inc. American Aromatics, Inc. American Cholesterol Products Inc. 54 Anderson, Carl N. Ansbacher-Siegle Corp. Armstrong Laboratories Aromatic Products, Inc. Avon Products	83 80 62 32
Bertrand Freres Bios Laboratories, Inc. Boake, Roberts & Co., Ltd., A. Bopf-Whittam Corp. Builders Sheet Metal Works Bulgarska Rosa Bush & Co., W. J.	18 80 26 — — 80
Cameo Die & Label Co. Camilli, Albert & LaLoue, Inc. Cart-Lowrey Glass Co. Cavalla, Inc., A. Centrico, Incorporated Chaleyer, Inc., Ph. Charabot & Co., Inc. Chauvet & Co., Pierre Chiris Co., Inc., Antoine Citrus & Allied Essential Oils Co. Clark-Millner Sales Co. Classified Advertisements Continental Can Company, Hazel Atlas Glass Division Continental Filling Corp. 21, Cosmetries, Inc. Croda, Inc.	84 6 82 — 111 — 77 83
DeLaire, Inc. Descollonges, Inc. Distillation Products Industries Div. of Eastman Kodak Dodge & Olcott, Inc. Inside Front Co Dow Chemical Co., The Dragoco, Inc.	82 ver
Emulsol Chemical Corporation Ertel Engineering Corp Esrolko, Ltd	76

Fairmount Chemical Co., Inc	82 55 77
General Chemical Div., Allied Chemical & Dye Corp. Genesee Trading Co., Inc. Gesell Incorporated, R. Givaudan-Delawanna, Inc Insert 28- Glidden Company, The Goldschmidt Chemical Corp.	71
Halby Products Hazel-Atlas Glass Division Continental Can Company Heine & Company Heyden-Newport Chemical Corp. Hoffman-LaRoche, Inc.	
Ising Corporation, C. E	-
Katz & Co., Dr. Alexander, Div. of F. Ritter & Co. Kenbury Glass Works Knapp Products, Inc. Kohnstamm & Company, Inc. Kolmar Laboratories Inc.	8:
Lambert Engraving Company Lanitis Bros., Ltd. Lautier Fils, Inc. Leberco Laboratories Leeben Color & Chemical Co. T. Leonhard Wax Co. Long Island Association Lueders & Co., George	8: 7: 8: 2:
Malmstrom & Co., N. I	8
Old Empire, Inc Owens-Illinois Glass Co,	6

Penick & Co., S. B. Perry Bros. Pfizer & Co., Inc., Chas. Polak's Frutal Works Polak & Schwarz, Inc. Polarome Manufacturing Company, Inc. Powr-Pak, Inc. Private Label Cosmetics Co., Inc.	
Reed Research Corp., The Reheis Co., Inc. Rhodia, Inc. Richford Corp. Risdon Manufacturing Co., The	59
Back Cov	er
Ritter & Co., F.	75
Robertet & Co., P.	31
Roure-Dupont, Inc	_
Schimmel & Co., Inc.	_
Schimmer & Co., Inc.	
Sheffield Tube Corp. Shield Chemical Co., Inc. Shulton, Inc. Snell, Foster D. Standard Dry Label & Box Co. Sun-Lac Inc. Synfleur Scientific Labs, Inc. Syntomatic Corporation	19 83 62 8
Thomasson Of Pa., Inc	62 71
Universal Outlet	82 e1
Van Amerigen-Haebler, Inc 24-	2
Vanderbilt Co., R. T	13
	-
Venley & Company, Albert	
Verley & Company, Albert	-
Verona Chemical Co	5
Whittaker, Clark & Daniels	-
Will & Baumer Candle Co., Inc	75
will be because out and the term	-



Rose 15 E. 48th St., New York

## "MAXIMAROME"

"Naturals"

CAMILLI, ALBERT & LALOUE, INC.



Jasmin Grasse, France Tel: 870



Through the magic of the perfume chemist, one of the industry's most precious and essential ingredients, ambergris, has been recreated. AMBREINE SOLID has just left the D&O Laboratories to fill a space, long empty on the perfumer's shelf. A fused blend of natural and synthetic fixatives and sweeteners, AMBREINE SOLID appears physically as irregularly shaped lumps which melt or dissolve with gentle heat. Clearly soluble in Benzyl Acohol, Benzyl Benzoate and mixtures of essential oils and aromatic chemicals, it is an important ingredient in many popular extracts and particularly useful for sweetening and fixing powder perfumes. AMBREINE SOLID D&O is a rare addition to the perfumer's stock of basic raw materials. Ask for samples.

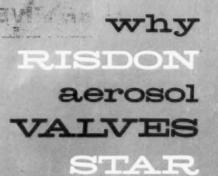
Essentially for You



OUR 139M TEAR OF SERVICE

**DODGE & OLCOTT. INC.** 

180 Varick Street, New York 14, N. Y. Sales Offices in Principal Cities



in so many
cosmetic and
pharmaceutical
successes

It's a combination of talent and beauty
that makes the Risdon valve line
the top performer in successful cosmetic
and pharmaceutical packaging.

These valves have a wide range of ability to enhance both the performance and appearance of glass, plastic and metal containers. In the line, you'll find special mechanical features such as non-metallic construction, instant on-off action without springs, the patented "Micro-Mist" actuator as well as actuators for horizontal and vertical sprays or foam dispensing.

Risdon offers the most complete line of valves for dispensing the widest variety of formulations. Applications include conventional aerosols. 3-phase products, alcohol base products, foam products, powder sprays, metered sprays, ultra-low pressure sprays and products containing propellant emulsions or dispersions.

A wide variety of standard or custom actuator designs as well as plastic or metal protective overcape are also supplied by Risdan.

Write for free booklets on Risdon valves for your product.

THE RISDON MANUFACTURING COMPANY (R) Valve Division, Naugatuck, Conn.



